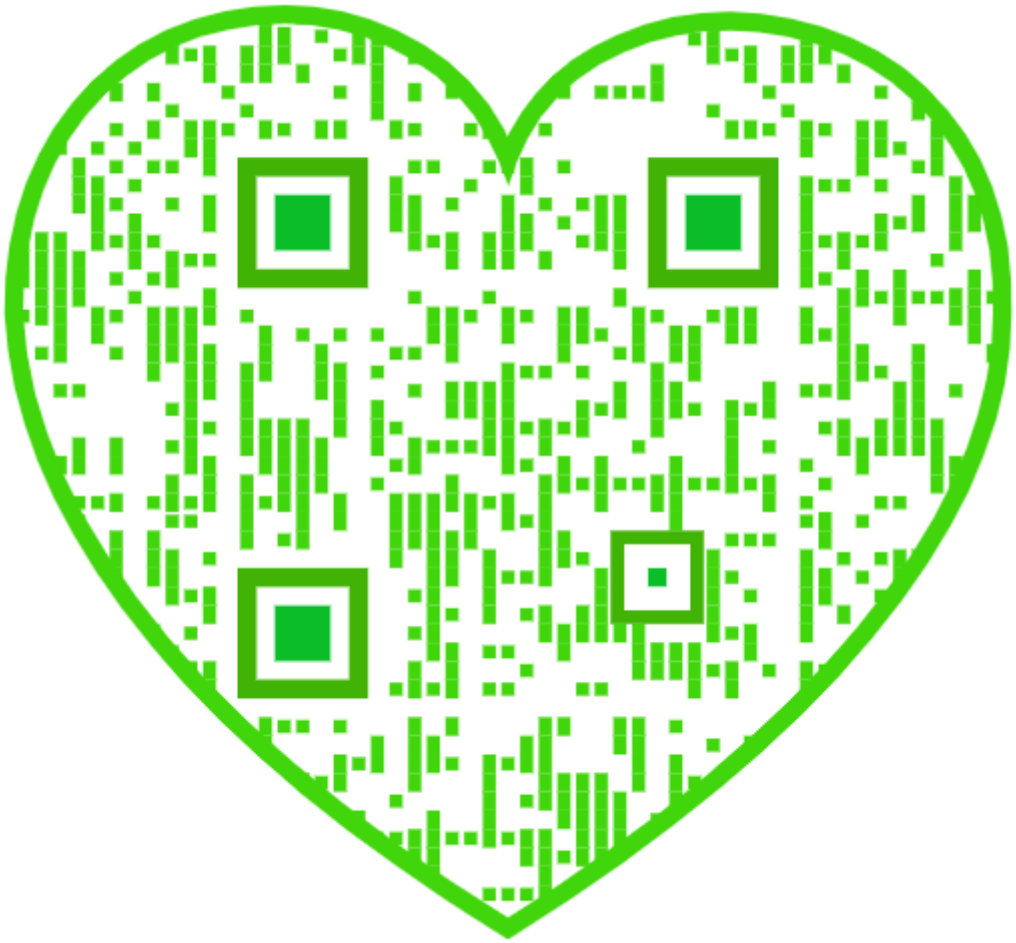
THE

HANDY HORSE-BOOK

BY

CAVALRY OFFICER



MICHAEL MCLOUGHLIN

THE

HANDY HORSE-BOOK

TO

MAJOR-GENERAL LORD GEORGE PAGET, C.B.

Inspector-General of Cavalry,

SON OF THE DISTINGUISHED HORSEMAN AND HERO WHO COMMANDED THE CAVALRY AT WATERLOO, AND HIMSELF A LEADER AMONG THE "IMMORTAL SIX HUNDRED,"

THIS BOOK IS BY PERMISSION INSCRIBED,

IN TRIBUTE TO HIS SOLDIERLY QUALITIES, AND TO HIS CONSIDERATION FOR THE NOBLE ANIMAL WHICH HAS CARRIED THE BRITISH CAVALRY THROUGH SO MANY DANGERS TO SO MANY TRIUMPHS,

BY HIS LORDSHIP'S OBEDIENT SERVANT,

"MAGENTA."

PREFACE.

FINDING myself a standing reference among my friends and acquaintance on matters relating to horse-flesh, and being constantly in the habit of giving them advice verbally and by letter, I have been induced to comply with repeated suggestions to commit my knowledge to paper, in the shape of a Treatise or Manual.

When I say that my experience has been practically tested on the road, in the field, on the turf (having been formerly a steeplechase-rider, as well as now a hunting horseman), with the ribbons, and in a cavalry regiment, I must consider that, with an ardent taste for everything belonging to horses thus nourished for years, I must either have sadly neglected my opportunities, or have

picked up some knowledge of the use and treatment of the animal in question.*

Born and bred, I may say, in constant familiarity with a racing-stable, and having been always devotedly attached to horses, the wrongs of those noble animals have constantly been before my eyes, and I have felt an anxious desire to see justice done to them, which, I am sorry to say, according to my observation, is but too seldom the case; indeed, I have often marvelled at the tractability of those powerful animals under the most perverted treatment by their riders and drivers.

* It may be well to let my readers know how I became experienced on the *road*. In the days when coaching was in its perfection (and when many county gentlemen indulged in their fancy for the use of the "ribbons"), I became, during a long interval from service, deeply and actively concerned in a coaching establishment of the first order; and those who, some years since, travelling between Dublin and Killarney *via* Limerick (a distance of about 185 miles), may have happened to hear coachmen and helpers talking of the "Captain," will recognise in the writer the individual thus referred to, who was also in partnership with the famous Bianconi in the staging on the Killarney line. Several years spent in such a school will probably be considered a good apprenticeship to the study of one branch of the subject herein treated upon—viz., the management of horses on the road.

My object, therefore, in offering the following remarks, is not to trench upon the sphere of the professional veterinary surgeon or riding-master, but to render horse-proprietors independent of the dictation of ignorant farriers and grooms. Intending this little work merely as a useful manual I have purposely avoided technicalities, as belonging exclusively to the professional man, and endeavoured to present my dissertations on disease in the most comprehensive terms possible, proposing only simple remedies as far as they go.

When definitions of a case become delicate and incomprehensible to the uninitiated, they obviously belong to those who have studied anatomy professionally, though, for the satisfaction of my readers, I may mention that, as an amateur, I have myself devoted much time and thought to that science, and that any treatment of disease herein recommended has been carefully perused and approved by a veterinary surgeon. Theories are excluded, and I confine myself simply to practical rules founded on my own experience.

Hints and remarks are here offered to the general public, which, to practical men, will appear trifling

and unnecessary; but keen and extended observation, carried on as opportunity offered, amongst all classes and in many countries and climates, has given me an insight into the want of reasoning exhibited by men of every station in dealing with the noble and willing inmates of the stable, and has assisted in suggesting the necessity for just such A B C instructions as are herein presented by the Public's very humble servant,

"MAGENTA."*

* The soubriquet by which the Author is known in his regiment.

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THE

HANDY HORSE-BOOK.

PART I.

BREEDING.

A FEW words only of observation would I make on this subject. Palpably our horses, especially racers and hunters, are degenerating in size and power, owing mainly, it is to be feared, to the parents being selected more for the reputation they have gained as winners carrying feather-weights, than for any symmetrical development or evidence of enduring power under the weight of a man. We English might take a useful lesson in selecting parental stock from the French, who reject our theory of breeding from animals simply because they have reputation in the racing calendars, and who breed from none but those which have *shape* and *power*, as well as blood and performance, to recommend them.

SELECTING.

In selecting an animal, the character of the work for which he is required should be taken into consideration. For example, in choosing a hack, you will consider whether he is for riding or for draught. In choosing a hunter, you must bear in mind the peculiar nature of the country he will have to contend with.

A horse should at all times have sufficient *size* and power for the weight he has to move. It is an act of cruelty to put a small horse, be his courage and breeding ever so good, to carry a heavy man or draw a heavy load. With regard to colour, some sportsmen say, and with truth, that "a good horse can't be a bad colour, no matter what his shade." Objection may, however, be reasonably made to pie-balls, skew-balls, or cream-colour, as being too conspicuous,—moreover, first-class animals of these shades are rare; nor are the roan or mouse-coloured ones as much prized as they should be.

Bay, brown, or dark chestnuts,* black or grey horses, are about the most successful competitors in the market, and may be preferred in the order in which they are here enumerated. Very light chestnut, bay, and white horses are said to be irritable in temper and delicate in constitution.†

* The French dealers of the present day choose, for gentlemen's hack-horses, chestnuts with legs white half-way up, causing the action to look more remarkable. "There's no accounting for taste."

† It is to be remarked of bays, mouse-colours, and chestnuts, having a streak of a darker colour over the backbone from mane to tail (which sometimes, as with the donkey, crosses the shoulder)

Mares are objected to by some as being occasionally uncertain in temper and vigour, and at times unsafe in harness, from constitutional irritation. More importance is attached to these assumed drawbacks than they deserve; and though the price of the male is generally from one-fourth to one-sixth more than that of the female, the latter will be found to get through ordinary work quite as well as the former.

To judge of the Age by the Teeth.—The permanent nippers, or front teeth, in the lower jaw, are six. The two front teeth are cut and placed at from two to three years of age; the next pair, at each side of the middle ones, at from three and a half to four; and the corner pair between four and a half and five years of age, when the tusks in the male are also produced.

The marks or cavities in these nippers are effaced in the following order:—At six years old they are worn out in the two centre teeth, at seven in the next pair, and at eight in the corner ones, when the horse is described as "aged."

After this, as age advances, these nippers appear to change gradually year by year from an oval to a more detached and triangular form, till at twenty their appearance is completely triangular. After six the tusks become each year more blunt, and the grooves, which at that age are visible inside, gradually wear out.

The Hack to Ride.—A horse with a small well-shaped head seldom proves to be a bad one; therefore such, with small fine ears, should be sought in the first instance.

It is particularly desirable that the shoulder of a riding hack should be light and well placed. A high-

—that animals thus marked generally possess peculiar powers of endurance; and rat-tailed ones, though ugly, prove very serviceable.

withered horse is by no means the best for that purpose. Let the shoulder-blades be well slanted as the horse stands, their points light in front towards the chest. Nor should there be too wide a front; for such width, though well enough for draught, is not necessary in a riding horse, provided the chest and girth be *deep*.

As a matter of course the animal should be otherwise well formed, with rather long pasterns (before but not behind),—the length of which increases the elasticity of his movement on hard roads. His action should be independent and high, bending the knees. If he cannot walk well—in fact, with action so light that, as the dealers say, "he'd hardly break an egg if he trod on it"—raising his legs briskly off the ground, when simply led by the halter (giving him his head)—in other words, if he walks "close to the ground"—he should be at once rejected.

With regard to the other paces, different riders have different fancies: the trot and walk I consider to be the only important paces for a gentleman's ordinary riding-horse. It is very material, in selecting a riding-horse, to observe how he holds his head in his various paces; and to judge of this the intending purchaser should remark closely how he works on the bit when ridden by the rough-rider, and he should also pay particular attention to this point when he is himself on his back, before selection is made.*

* The extremes of various bad positions of the head when the bit is put in operation are—the throwing up the nose horizontal with the forehead, a trick denominated "stargazing," at which ewe-necked horses are very ready, and getting the bit up to the angles of the jaws. Such a horse can easily run away, and cannot be commanded without a martingal. Another bad point is when the animal leans his jaw firmly against the bit, and, placing his head

Respecting soundness, though feeling fully competent myself to judge of the matter, I consider the half-guinea fee to a veterinary surgeon well-laid-out money, to obtain his professional opinion and a certificate of the state of an animal, when purchasing a horse of any value.

The Hack for Draught ought to be as well formed as the one just described; but a much heavier shoulder and forehand altogether are admissible.

No one should ever for a moment think of putting any harness-horse into a private vehicle, no matter what his seller's recommendation, without first having him out in a single or double break, as the case may be, and seeing him driven, as well as driving him himself, to make acquaintance with the animal—in fact, *to find him out.*

The Hunter, like the hack, should be particularly well-formed before the saddle. He should be deep in the girth, strong in the loins, with full development of thigh, short and flat in the canon joint from the knee to the pastern, with large flat hocks and sound fore legs. This animal, like the road-horse, should lift his feet clear of the ground and walk independently, with evidence of great propelling power in the hind legs when put into a canter or gallop.

A differently-shaped animal is required for each kind of country over which his rider has to be carried. In the midland counties and Yorkshire, the large three-quarter or thoroughbred horse only will be found to have pace and strength enough to keep his place. In close countries, such as the south, south-west, and part

between his fore legs, the neck being over-arched, goes where he pleases: such is called by horsemen "a borer."

of the north of England, a plainer-bred and closer-set animal does best.

In countries where the fences are height jumps—a constant succession of timber, or stone walls—one must look for a certain angularity of hip, not so handsome in appearance, but giving greater leverage to lift the hind legs over that description of fence.

A hunter should be all action; for if the rider finds he can be carried safely across country, he will necessarily have more confidence, and go straighter, not therefore requiring so much pace to make up for roundabout "gating" gaps and "craning." *

BUYING.

If you propose purchasing from a dealer, take care to employ none but a respectable man. It is also well to get yourself introduced to such a one, by securing the good offices of some valuable customer of his for the purpose; for such an introduction will stimulate any dealer who values his character to endeavour by his dealings to sustain it with his patron.

Auction.—An auction is a dangerous place for the uninitiated to purchase at. If, however, it should suit you to buy in that manner, the best course to pursue is to visit the stables on the days previous to the sale, for in all well-regulated repositories the horses are in

* The racer not coming within the province of this little work, I will only offer one maxim with reference to such horses in general—viz., never race any horse unless you make up your mind to have most probably a fretful, bad-tempered animal ever after. The course of training and the excitement of contest will induce such a result.

for private inspection from two to three days before the auction-day. Taking, if possible, one good judge with you, eschewing the opinions of all grooms and others—in fact, fastening the responsibility of selection on the one individual—make for yourself all the examination you possibly can, in or out of stable, of the animal you think likely to suit you. There is generally *a way* of finding out some of the antecedents of the horses from the men about the establishment.

Fairs.—To my mind it is preferable to purchase at fairs rather than at an auction: indeed, a judge will there have much more opportunity of comparison than elsewhere.

Private Purchase.—In buying from a private gentleman or acquaintance, it is not unusual to get a horse on trial for three or four days. Many liberal dealers, if they have faith in the animal they want to dispose of, and in the intending purchaser, will permit the same thing.

Warranty.—As observed under the head of "Selecting," it is never wise to conclude the purchase of a horse without having him examined by a professional veterinary surgeon, and getting a certificate of his actual state. If the animal be a high-priced one, a warranty should be claimed from the seller as a *sine qua non;* and if low-priced, a professional certificate is desirable, stating the extent of unsoundness, for your own satisfaction.*

* If you happen to buy a low-priced animal, and depend upon your own opinion as to soundness, it is well to feel and look closely at the back part of the fore leg, above the fetlock, and along the pasterns, for cicatrices left after the performance of the operation of unnerving, by means of which a horse will go perhaps apparently sound while navicular disease is progressing in his foot, to

STABLING.

Ventilation is a matter of the first importance in a stable. The means of ingress and egress of air should be always three or four feet higher than the range of the horses' heads, for two simple reasons: first, when an animal comes in warm, it is not well to have cold air passing directly on the heated surface of his body; and, in the second place, the foul air, being the lightest, always ascends, and you give it the readiest mode of exit by placing the ventilation high up. The common louver window, which can never be completely closed, is the best ordinary ventilator.

Drainage ought to be closely investigated. The drains should run so as to remove the traps or grates outside the stable, or as far as possible from the horses, in order to keep the effluvium *away* from them. All foul litter and mass should be removed frequently during the day; straw and litter ought not to be allowed to remain under a horse in the daytime, unless it be considered expedient that he should rest lying down, in which case let him be properly bedded and kept as quiet as possible. In many cases the practice of leaving a small quantity of litter in the stall is a fine cloak for deposit and urine left unswept underneath, emitting that noxious ammonia with which the air of most stables is so disagreeably impregnated that on entering them from the fresh air you are almost stifled.

Masters who object to their horses standing on the

terminate in most serious consequences. — *See* "Navicular Disease," page 124.

bare pavement can order that, after the stall is thoroughly cleaned and swept out, a thin layer of straw shall be laid over the stones during the daytime. In dealers' and livery stables, and indeed in some gentlemen's, the pavement is sanded over, which has a nice appearance, and prevents slipping.

When the foul litter is abstracted, and the straw bedding taken from under the horse, none of it should be pushed away under the manger; let it be entirely removed: and in fair weather, or where a shed is available, the bedding should be shaken out, to thoroughly dry and let the air pass through it.

Wheaten is more durable than oaten straw for litter: but the fibre of the former is so strong that it will leave marks on the coat of a fine-skinned animal wherever it may be unprotected by the clothing; however, this is not material.

Light should be freely admitted into stables, not only that the grooms may be able to see to clean the horses properly, and to do all the stable-work, but if horses are kept in the dark it is natural that they should be more easily startled when they go into full daylight,—and such is always the consequence of badly-lighted stables. Of course, if a horse is ailing, and sleep is absolutely necessary for him, he should be placed separate in a dark quiet place.

Stalls should be wide, from six to seven feet across if possible, yielding this in addition to other advantages, that if the partitions are extended by means of bars to the back wall, either end stall can be turned into a loose-box sufficiently large to serve in an emergency.

A Loose-Box is unquestionably preferable to a stall

(in which a horse is tied up all the time he is not at work in nearly the same position), and is indispensable in cases of illness. Loose-boxes should be paved with narrow bricks, and when prepared for the reception of an animal whose shoes have been removed, the floor should be covered with sawdust or tan, or either of these mixed with fine sandy earth, or, best of all, peat-mould when procurable,—any of which, where the indisposition is confined to the feet *only*, may be kept slightly moistened with water to cool them.

In cases of general illness, straw should be used for bedding; and where the poor beast is likely to injure himself in paroxysms of pain, the walls or partitions should be well padded in all parts within his reach, and as a further precaution let the door be made to open outwards and be fastened by a bolt, as latches sometimes cause accidents.

Partitions should be carried high enough towards the head to prevent the horses from being able to bite one another, or get at each other's food.

With regard to stable-kickers, see the remarks on this subject under the head of "Vice" (page 83).

Racks and Mangers are now made of iron, so that horses can no longer gnaw away the manger piecemeal. Another improvement is that of placing the rack on a level with and beside the manger, instead of above the horses' heads; but notwithstanding this more reasonable method of feeding hay when whole, it is far preferable to give it as manger-food cut into chaff.

Flooring.—In the construction of most stables a cruel practice is thoughtlessly adopted by the way of facilitating drainage (and in dealers' stables to make horses look large), viz., that of raising the paving to-

wards the manger considerably above the level of the rear part. It should be borne in mind that the horse is peculiarly sensitive to any strain on the insertions of the back or flexor tendons of his legs. Thus in stalls formed as described, you will see the creature endeavouring to relieve himself by getting his toes down between the flags or stones (if the pavement will admit) with the heels resting upon the edges of them; and if the fastening to the head be long enough he will draw back still farther, until he can get his toes down into the drain-channel behind his stall, with the heels upon the opposite elevation of the drain. Proper pavement in your stable will help to alleviate a tendency towards what is called "clap of the back sinew."—*See* page 133.

The slope of an inch and a half or two inches is sufficient for purposes of drainage in paving stables; but if the drainage can be managed so as to allow of the flooring being made quite level, so much the better.

Should my reader be disposed to build stabling, he cannot do better than consult the very useful and practical work entitled 'Stonehenge, or the Horse in the Stable and in the Field.'

The horse being a gregarious animal, and much happier in society than alone, will, in the absence of company of his own species, make friends with the most sociable living neighbour he can find. A horse should not be left solitary if it can be avoided.

Dogs should never be kept in the stable with horses, or be permitted to be their playfellows, on account of the noxious emissions from their excrement. *Cats* are better and more wholesome companions.

GROOMING.

I do not profess to teach grooms their business, but to put masters on their guard against the common errors and malpractices of that class; and with a view to that end, two or three general rules are added which a master would do well to enforce on a groom when hiring him, as binding, under pain of dismissal.

1. Never to doctor a horse himself, but to acquaint his master immediately with any accident, wound, or symptom of indisposition about the animal, that may come under his observation, and which, if in existence, ought not to fail to attract the attention of a careful, intelligent servant during constant handling of and attendance on his charge.

2. Always to exercise the horses in the place appointed by his master for the purpose, and *never* to canter or gallop them.

3. To stand by while a horse is having its shoes changed or removed, and see that any directions he may have received on the subject are carried out.

4. Never to clean a horse out of doors.

These rules are recommended under a just appreciation of that golden one, "Prevention is better than cure."

If the master is satisfied with an ill-groomed horse, nine-tenths of the grooms will be so likewise; therefore he may to a great extent blame himself if his bearer's dressing is neglected.

Grooms are especially fond of using water in cleaning the horse (though often rather careful how they use it with themselves, either inside or out): it saves them

trouble, to the great injury of the animal. The same predominating laziness which prompts them to use water for the removal of mud, &c., in preference to employing a dry wisp or brush for the purpose, forbids their exerting themselves to employ the proper means of drying the parts cleaned by wet. They will have recourse to any expedient to dry the skin rather than the legitimate one of friction. Over the body they will place cloths to soak up the wet; on the legs they will roll their favourite bandages. It is best, therefore, to forbid the use of water above the hoof for the purpose of cleaning—except with the mane and tail, which should be properly washed with soap and water occasionally.

When some severe work has been done, so as to occasion perspiration, the ears should not be more neglected than the rest of the body; and when they are dried by hand-rubbing and pulling, the horse will feel refreshed.

As already recommended, cleaning out of doors should be forbidden. If one could rely on the discretion of servants, cleaning might be done outside occasionally in fine weather; but licence on this score being once given, the probability is that your horse will be found shivering in the open air on some inclement day.

The groom always uses a picker in the process of washing and cleaning the feet, to dislodge all extraneous matter, stones, &c., that may have been picked up in the clefts of the frog and thereabouts; he also washes the foot with a long-haired brush. In dry weather, after heavy work, it is good to stop the fore feet with what is called "stopping" (cow-dung), which is not difficult to procure. Wet clay is sometimes used in

London for the purpose in the absence of cow-dung. Very useful, too, in such case will be found a stopping composed of one part linseed-meal to two parts bran, wetted, and mixed to a sticking consistency.

The evidence of care in the groomed appearance of the mane and tail looks well. An occasional inspection of the mane by the master may be desirable, by turning over the hairs to the reverse side; any signs of dirt or dandriff found cannot be creditable to the groom.

Bandaging.—When a hunter comes in from a severe day, it is an excellent plan to put *rough* bandages (provided for the purpose) on the legs, leaving them on while the rest of the body is cleaning; it will be found that the mud and dirt of the legs will to a great extent fall off in flakes on their removal, thus reducing the time employed in cleaning. When his legs are cleaned and well hand-rubbed, put on the usual-sized flannel bandages. They should never remain on more than four or six hours, and when taken off (not to be again used till the next severe work) the legs should be once more hand-rubbed.

Bandages ought not to be used under other circumstances than the above, except by order of a veterinary surgeon for unsoundness.

In some cases of unsoundness—such as undue distension of the bursæ, called "wind-galls," the effect of work—a linen or cotton bandage kept continually saturated with water, salt and water, or vinegar, and not much tightened, may remain on the affected legs; but much cannot be said for the efficacy of the treatment.

For what is called "clap," or supposed distension of the back sinew (which is in reality no distension of

the tendon, as that is said to be impossible, though some of its fibres may be injured, but inflammation of the sheath through which the tendon passes), the cold lotion bandaging just described, in connection with the directions given under the head of "Shoeing" (page 80), will be found very serviceable.

Grooms' Requisites are usually understood to comprise the following articles:—a body-brush, water-brush, dandriff or "dander" brush, picker, scraper, mane-comb, curry-comb, pitchfork, shovel and broom, manure-basket, chamois-leather, bucket, sponges, dusters, corn-sieve, and measures; leather boot for poultices, clyster syringe (requiring especial caution in use —*see* page 148, note), drenching-horn, bandages (woollen and linen); a box with a supply of stopping constantly at hand; a small store of tow and tar, most useful in checking the disease called thrush (page 125) before it assumes a chronic form; a lump of rock-salt, ready to replace those which should be always kept in the mangers to promote the general health of the animals as well as to amuse them by licking it; a lump of chalk, ready at any time for use (in the same manner as rock-salt) in the treatment of some diseases, as described, pages 143 and 149.

Singeing, there is little doubt, tends to improve the condition of the animal; so much so, that timid users do well to remember that animals which, before the removal of their winter coat, required perpetual reminders of the whip, will, directly they are divested of that covering, evince a spirit, vigour, and endurance which had remained, perhaps, quite unsuspected previously. In fact, in most cases, the general health and appetite seem to be improved.

Singeing, when severe rapid work is done, enables the horse to perform his task with less distress, and when it is over, facilitates his being made comfortable in the shortest possible space of time.

Singeing, if done early in the winter, requires to be repeated lightly three or four times during the season.

Clipping has exactly the same effect as the above, and is preferable to it only in cases where, the animal's coat being extremely long, extra labour, loss of time, and flame, are avoided by the clipping process. Singeing is best with the lighter coats, but sometimes thin skinned and coated animals are too nervous and excitable to bear the flame near them for this purpose, in which case the cause of alarm ought obviously to be avoided, and clipping resorted to.

It is worth while to employ the best manipulators to perform these operations.

With horses intended for slow and easy work, and liable to continued exposure to the weather, singeing or clipping only the under part of the belly, and the long hairs of the legs, will suffice. Unless neatly and tastily done, this is very unsightly on a gentleman's horse. Clipping, if not done till the beginning of December, seldom requires repetition.

In stony and rough countries, it is the habit of judicious horsemen to leave the hair on their hunters' legs from the knees and hocks down, as a protection to them.

HALTERING.

The Head-Stall should fit a horse, and have a proper brow-band; it is ridiculous to suppose that the same

sized one can suit all heads. Ordinary head-stalls have only one buckle, which is on the throat-lash near-side; and if the stall be made to *fit*, that is sufficient. *Otherwise* there should be three buckles, one on each side of the cheek-straps, besides the one on the throat-lash.

Let the fastening from the head-stall to the log be of rope or leather. Chain fastenings are objectionable, because, besides being heavy, they are very apt to catch in the ring, and they make a fearful noise, especially where there are many horses in the stable. By having rope or leather as a fastener, instead of chain, the log may be lighter (of wood instead of iron), and the less weight there is to drag the creature's head down, the less the distress to him. Poll-evil (page 107), it is said, has frequently resulted from the pressure of the head-stall on the poll, occasioned by heavy pendants.

Chains are more durable, and that is all that can be said in their favour, except that they may be necessary for a few vicious devils who are up to the trick of severing the rope or leather with their teeth.

See that the log is sufficiently heavy to keep the rope or leather at stretch, and that the manger-ring is large enough to allow the fastening to pass freely. If the log is too light, or the manger-ring too small, the likely result will be that the log will remain close up under the ring, the fastening falling into a sort of loop, through which the horse most probably introduces his foot, and in his consequent alarm and efforts to disentangle his legs, chucks up his head, and away he goes on his side, gets "*halter-cast*," most likely breaks one of his hind legs in his struggles to regain his footing, or at least dislocates one of their joints.

CLOTHING.

Opinions differ materially as to the amount of clothing that ought to be used in the stable. My view of the matter is, that a stable being, as it should be, thoroughly ventilated, necessitates the horses in it being to a certain extent kept warm by clothing. An animal that has not been divested of his own coat by clipping or singeing, will require very little covering indeed; for nature's provision, being sufficient to protect him out of doors, ought surely to suffice in the stable, with a very slight addition of clothing. If he has been clipped or singed, covering enough to make up for what he has lost ought to be ample: by going beyond this the horse is only made tender, and more susceptible of the influences of the atmosphere when he comes to be exposed to it with only a saddle on his back.

In parts of North America, I have observed, where the stables are built roughly of wood, with many fissures to admit the weather, horses are seldom, if ever, sheeted. They are certainly rarely divested of their coats; but during work, as occasion may require, it is usual for the rider, when stopping at any place, to leave his horse "hitched" (as they call it) to any convenient post or tree, in all weathers, and for any length of time, and these horses scarcely ever catch cold.

The best *Sheet* is formed of a rug (sizeable enough to meet across the breast and extend to the quarters), by simply cutting the slope of the neck out of it, and fastening the points across the breast by two straps and buckles.

The *Hood* need only be used when the horse is at

walking exercise, or likely to be exposed to weather, or for the purpose of sweating, when a couple of them, with two or three sheets, may be used.—*See* page 32.

Horse-clothing should be, at least once a-week, taken *outside* the stable, and well beaten and *shaken* like a carpet.

Rollers should be looked to from time to time, to see that the pads of the roller *do not meet within three or four inches* (over the backbone),—in other words, there should be always a clear channel over it, nearly large enough to pass the handle of a broom through, so as to avoid the possibility of the upper part of the roller even touching the sheet over the spinal ridge, which, if permitted, will be sure to cause a sore back, to the great injury of the horse and his master, arousing vicious habits in the former to resent any touch, necessary or unnecessary, of the sore place on so sensitive a part, and rendering him irritable when clothing, saddling, or harnessing, or if a hand even approach the tender place.

This is so troublesome a consequence of not paying attention to the padding of rollers, that a master will do well to examine them himself for his own satisfaction.

Knee-Caps.—On all occasions when a valuable horse is taken by a servant on road or rail, his knees should be protected by caps. The only way to secure them is to fasten them tightly *above* the knee, where elastic straps are decidedly preferable, leaving the fastening below the knee slack.

A Leather Boot, lined with sponge, or one of felt with a strong leather sole, should be ready in every stable to be used as required, in cases of sudden foot-lameness.

FEEDING.

The cavalry allowances are 12 lb. hay, 10 lb. oats, and 8 lb. straw daily, which, I know by experience, will keep a healthy animal in condition with the work required from a dragoon horse, of the severity of which none but those acquainted with that branch of the service have any idea.

Until he is perfectly fit for the ranks, between riding-school, field-days, and drill, the troop-horse has quite work enough for any beast. I may add that few horses belonging to officers of cavalry get more than the above allowance, unless when *regularly* hunted, in which case additional corn and beans are given.

With severe work, 14 lb. to 16 lb. of oats, and 12 lb. of hay, which is the general allowance in well-regulated hunting stables, ought to be sufficient. Beans are also given in small quantity.

Some persons feed their horses three times a-day, but it is better to divide their food into four daily portions, watering them at least half an hour before each feed.

The habit which some grooms have of feeding while they are teazing an animal with the preliminaries of cleaning, is very senseless, as the uneasiness horses are sure to exhibit under anything like grooming causes them to knock about their heads and scatter their food. On a journey, according to the call upon the system by the increased amount of work, so should the horse's feeding be augmented by one-third, one-fourth, or one-half more than usual. A few beans or pease may well be added under such circumstances.

In stables where the stalls are divided by bales or swinging-bars, the horses when feeding should have their heads so tied as to prevent them from consuming their neighbours' food, or the result would be that the greedy or more rapid eaters would succeed in devouring more than their fair share, while the slower feeders would have to go on short commons.

Oats ought *always* to be *bruised*, as many horses, whether from greediness in devouring their food, or from their teeth being incapable of grinding, swallow them whole ; and it is a notorious fact that oats, unless masticated, pass right through the animal undigested.

When supplies have been very deficient with forces in the field, the camp-followers have been known to exist upon the grain extracted from the droppings of the horses.

It should be remembered that not more than at the utmost two days' consumption of oats should be bruised at a time, as they soon turn sour in that state, and are thus unfit for the use of that most delicate feeder, the horse. All oats before being bruised should be well sifted, to dispose of the gravel and dust which are always present in the grain as it comes from the farmer. Unbruised oats, if ever used, should be similarly prepared before being given in feed.

Hay ought always to be cut into chaff or may be mixed with the corn, which is the only way to insure the proper proportion being given at a feed. When the hay is not cut but fed from the rack, never more than 3 lb. should be put in the rack at a time. If desirable to give as much as 12 lb. daily, let the rack be filled six times in twenty-four hours.

Beans must be invariably split or bruised. It is

better to give a higher price for English beans than to use the Egyptian at any price ; the latter are said to be impregnated with the eggs of insects, which adhere to the lining of the horse's stomach, causing him serious injury. In India horses are principally fed on a kind of small pea called "gram"—in the United States their chief food is maize ; the oat-plant not succeeding well in either of those regions.

Bran.—Food should be varied occasionally, and all horses not actually in training ought to have a bran-mash once a-week. The best time to give this is for the first feed after the work is done, on the day preceding the rest day, whenever that may be.

Even hunters, after a hard day, will eat the bran with avidity, and it is well to give it for the first meal. Its laxative qualities render it a sedative and cooler in the half-feverish state of system induced by the exertion and excitement of the chase; and, according to my experience, if given just after the work is done, the digestive process, relaxed by the bran, has full time to recover itself by the grain-feeding before the next call is made on the horse's powers. If the bran is not liked, a little bruised oats may be mixed through it to tempt the palate. Whole grains of oats should never be mixed with bran, as they must of necessity be bolted with the latter, and passed through the animal entire.

Mash.—When only doing ordinary work, the following mash should be given to each horse on Saturday night after work, supposing your beasts to rest on Sunday :—

Put half a pint of linseed in a two-quart pan with an even edge ; pour on it one quart of boiling water, cover it close, and leave to soak for four hours.

At the same time moisten half a bucket of bran with a gallon of water. When the linseed has soaked for four hours, a hole must be made in the middle of the bran, and the linseed mass mixed into the bran mass. The whole forms one feed.

If a cold is present, or an animal is delicate, the bran can be saturated with boiling water, of which a little more can be added to warm it when given.

Carrots, when a horse is delicate, will be found acceptable, and are both nutritious and wholesome as food. In spring and summer, when vetches or other green food can be had, an occasional treat of that sort conduces to health where the work is sufficiently moderate to admit of soft feeding.

When an animal is "off his feed," as it is called, attention should be immediately directed to his manger, which is often found to be shamefully neglected, the bottom of it covered with gravel, or perhaps the ends and corners full of foul matter, such as the sour remains of the last bran-mash and other half-masticated leavings.

The introduction of any greasy or fetid matter into a horse's food will effectually prevent this dainty creature from touching it. It used to be a common practice at hostelries in the olden time, to rub the teeth of a traveller's horse with a tallow candle or a little oil; thus causing the poor beast to leave his food untouched for the benefit of his unfeeling attendant.

Again, the oats or hay may be found, on close examination, to be musty, which causes them to be rejected by the beast.

Where no palpable cause for loss of appetite can be discovered, reference should be made to a qualified

veterinary surgeon, who will examine the animal's mouth, teeth, and general state of health, and probably report that the lining of the cheeks is highly inflamed in some part, owing to undue angularity or decay of the teeth, and he will know how to act accordingly.

When horses are on a journey, or a long ride home after hunting, some people recommend the use of gruel; but, from experience, I prefer giving a handful of wetted hay in half a bucket of *tepid* water, or ale or porter.—*See* page 37.

Feeding on Board Ship should be confined to chaff and bran, mixed with about one-fourth the usual quantity of *bruised* oats.

Though horses generally look well when "full of flesh," there are many reasons why they should not be allowed to become fat after the fashion of a farmer's "stall-feds." Some really good grooms think this form of condition the pink of perfection. They are mistaken. An animal in such a state is quite unfit to travel at any fast pace or bear continued exertion without injury, and may therefore be considered so far useless.

He is also much more liable to contract disease, and if attacked by such the constitution succumbs more readily.

Moreover, the superfluous weight of the cumbrous flesh and fat tends to increase the wear and tear of the legs; and if the latter be at all light from the knee to the pastern, they are more likely to suffer.

On the other hand, it may be well to observe, by way of caution, that it is by no means good management to let a horse become at any time reduced to *actual leanness* through overwork or deficient feeding. *It is far easier to pull down than to put up flesh.*

These hints on feeding may be closed with a remark, that in all large towns *contractors* are to be found ready and willing to enter into contract for feeding gentlemen's horses by the month or year. This is a very desirable arrangement for masters, but one frequently objected to by servants, who, however, in such cases can easily be replaced by application to the dealer, he having necessarily excellent opportunities of meeting with others as efficient.

Contractors should not be allowed to supply more than two or three days' forage at a time.

WATERING.

Horses are greater epicures in water than is generally supposed, and will make a rush for some favourite spring or rivulet where water may have once proved acceptable to their palate, when that of other drinking-places has been rejected or scarcely touched.

The groom's common maxim is to water twice a-day, but there is little doubt that horses should have access to water more frequently, being, like ourselves or any other animal, liable from some cause—some slight derangement of the stomach, for instance—to be more thirsty at one time than another; and it is a well-known fact that, where water is easily within reach, these creatures never take such a quantity at a time as to unfit them for *moderate work* at any moment. If an arrangement for continual access to water be not convenient, horses should be watered before every feed, or at least thrice a-day, the first time being in the morning, an hour before feeding (which hour will be

employed in grooming the beast); and it may be observed that there is no greater aid to increasing their disposition to put up flesh, than giving them as much water as they like before and after every feed.

A horse should never be watered when heated, or on the eve of any extraordinary exertion. Animals that are liable to colic or gripes, or are under the effect of medicines, particularly such as act on the alimentary canal, and predispose to those affections, should get water with the chill off.

Watering in Public Troughs, or places where every brute that travels the road has access, must be strictly avoided. Glanders, farcy, and other infectious diseases may be easily contracted in this way.

GRAZING.

The advantage of grazing, as a change for the better in any, and indeed in every, case where the horse may be thrown out of sorts by accident or disease, becomes very questionable, on account of the *artificial state* in which he must have been kept, to enable him to meet the requirements of a master of the present day in work. If the change be recommended to restore the feet or legs, this object may be attained, and much better, by keeping the creature in a loose-box without shoes, on a floor covered with sawdust or tan, kept damp as directed (page 10), to counteract whatever slight inflammation may be in the feet and legs, or, best of all, covered with peat-mould, as this does not require to be damped, and the animal can lie down on it; besides, the properties of the peat neutralise the

noxious ammonia, and it does not consequently require to be so often renewed. In the loose-box also he can take quite as much exercise as is necessary for an invalid intended to be laid up, and there he can be supplied with whatever grain, roots, or succulent food may be deemed necessary.

As for any other advantage to be derived from a run at grass, unless for the purpose of using the herb as an alterative, I never could see it: and even this end, unless the horse has a paddock to himself, can hardly be gained; for if there are too many beasts for the production of the ground, the fare must be scanty, and each animal half starved.

The disadvantages of changing a horse to grass from the artificial state of condition are the following:—

1. That condition is sure to be lost (at least as far as it is necessary to fit for work, especially to go across country at a hunting pace, with safety to himself and his rider), and not to be regained for a considerable time, and at great cost.

2. The horse is exceedingly liable to meet with accident from the playfulness or temper of his companions.

3. Worms of the most dangerous and pertinacious description are picked up nowhere but at grass.

4. Many ailments are contracted from exposure and hardship or bad feeding; and owing to the animal being removed from under immediate inspection, such ailments gain ground before they are observed. Moreover, at grass the horse is more exposed to contagious and epidemic diseases.

5. Horses suffer great annoyance from flies in summer time, not having long tails like horned cattle to

reach every part of their body; and wherever any superficial sore may be present, the flies are sure to find it out.

As to aged animals, it is sheer cruelty (practised by some masters with the best intentions and worst possible results) to turn them out to grass. Such creatures have probably been accustomed in the earlier part of their lives to warm stables, their food put under their noses, good grooming, and proper care. You might just as well turn out a gentleman in his old age among a tribe of friendly savages, unclad and unsheltered, to exist upon whatever roots and fruits he could pick up, as expose a highly-bred and delicately-nurtured old horse to the vicissitudes and hardships of a life at grass.

TRAINING.

RAREY'S SYSTEM.

The principle of this system is that of overpowering the horse that may in some instances have even become dangerous and useless, from having learned the secret that *his strength gives him an advantage over his master*—man. *Unconsciously* deprived of his power of resistance, his courage vanishes; the spirit which rose against all *accountable* efforts to subdue it, that would scorn to yield to overweight, pace, work, or any other *evidence* of man's power, and which in the well-dispositioned animal causes him to strain every nerve to meet what is required of him rather than succumb, is by Rarey's system subdued through a ruse so effected

that the power which overwhelms all the creature's efforts at resistance appears to originate and be identified with the man who can thus, for the first time, take liberties with him, which he has lost the power of resenting; and man thenceforward becomes his master. The method pursued by Mr Rarey in subduing such a vicious and ungovernable horse as Cruiser, is this: Placing himself under a waggon laden with hay, to which the animal is partly coaxed, partly led by guide-ropes, and stealing his fingers through the spokes of the waggon-wheel, he raises and gently straps up one fore leg, and fastens a long strap round the fetlock of the other, the end of which he holds in his hand and checks when necessary. The beast, thus unconsciously tampered with, is quite disposed to resent in his usual style the subsequent impertinent familiarities of his tamer; but being by the foregoing precautions cast prostrate on his first attempt to move, and finding all his efforts to regain his liberty and carry out reprisals abortive, worn-out and hopeless, he at length yields himself helplessly to his victor's obliging attentions, of sitting on him as he lies, drumming and fiddling in his ears, &c., and is thenceforward man's obedient and tractable servant.

There is no doubt that Mr Rarey's plan of thus overcoming the unruly or vicious beast by mild but effectual means, is the right one to gain the point, *as far as it goes;* but breaking him in to saddle or draught, improving his paces, or having ability in riding or driving any horse judiciously, must be considered another affair, and only to be acquired through more or less competent instruction, and by practice combined with taste.

In training, the use of a dumb jockey * will be found most serviceable to get the head into proper position, and to bend the neck. Two hours a-day in this gear, while the horse is either loose in a box or fastened to the pillar-reins if in a stall, will not at all interfere with his regular training, exercise, or work, and will materially aid the former result.

I greatly advocate the use of the dumb jockey without springs, even with formed horses, who, being daily used to it, need no such adjuncts as bearing-reins, but will arch their necks, work nicely on the bit, and exhibit an altered show and style in action that is very admirable in a gentleman's equipage.

Should my reader be much interested in breaking-in rough colts, I recommend him to consult 'Stonehenge,' by J. H. Walsh, F.R.C.S., editor of the 'Field.'

Training for Draught.—Before the first trial in the break-carriage, give your horse from half-an-hour to an hour's quiet ringing in the harness, to which he should have been previously made accustomed by wearing it for a couple of hours the two or three preceding days. The first start should be in a regular break, or strong but inexpensive vehicle, and stout harness, with also saving-collar, knee-caps, and kicking-strap—no bearing-rein. He should be led by ropes or reins (in single harness on both sides of the head), and tried on a level, or rather down than up a slight inclination. The place selected should be one where there is plenty of unoccupied roadway.

Better begin in double harness, and let the break-horse with which the driver is to start the carriage be

* The old-fashioned pattern, with leather gear, is, after all, the best, as proved by the most practical men of the day.

strong and willing, so as to pull away the untried one.

The Neck usually suffers during the first few lessons in training to harness; and until that part of it where the collar wears becomes thoroughly hardened by use, it should be bathed with a strong solution of salt and water *before* the collar is taken off, that there may be no mistake about its being done at once. Should there be the least abrasion of the skin, do not use salt and water, but a wash of 1 scruple chloride of zinc to 1 pint of water, dabbed on the sore every two or three hours with fine linen rag, and give rest from collar-work till healed; then harden with salt and water; and when the scab has disappeared, and the horse is fit for harness, chamber the collar over the affected part, and employ for a while a saving-collar. A sore neck will produce a jibbing horse, and therefore requires to be closely attended to in his training.

EXERCISING.

It is desirable that a master should appoint a particular place for the exercising of his horses, coupled with strict injunctions to his groom on no account to leave it. No master should give his servants the option of going where they please to exercise, their favourite resort being often the precincts of a public-house, with a sharp gallop round the most impracticable corners to make up the time. An occasional visit of the master to the exercising ground is a very salutary check upon such proceedings.

The best possible exercise for a horse is walking—the

sod or any soft elastic surface being better than the road for the purpose; and if the latter only is available, use knee-caps as a safeguard.

Two hours' daily exercise (*if he gets it*) at a *fast* walk will be enough to keep a hack fit for his work; and it is usual with some experienced field-horsemen never to allow their hunters, *when once up to their work*, to get any but walking exercise for as much as four hours daily, two hours at a time—that is, when they desire to keep them "fit."

Ladies' and elderly gentlemen's horses ought most particularly to be exercised, and not overfed, to keep them tame and tractable, and to guard against accidents.

The foregoing directions refer to the *preparations* for the master's work, and are what I should give my groom.

Sweating.—In case it is desirable to prepare an animal for any extraordinary exertion, the readiest, safest, and most judicious means is by sweating, carefully proceeded with, by using two or three sets of body-clothes, an empty stomach being indispensable for the process, and a riding-school, if available, the best place for the necessary exercise,—a sweat being thus sooner obtained free from cold air, and the soft footing of such a place saving the jar on the legs more even than the sod in the field, unless it happen to be very soft.

Sweating is a peculiarly healthy process for either man or beast; and to judge of the benefit derived by a horse through that means, from the effect of a heavy perspiration through exercise on one's self, there seems little doubt that it is very renewing to the *physique*.

Ringing or *Lounging* with a cavesson, though not ordinarily adopted, except by the trainer, is nevertheless

most useful as a means of exercise. It is a very suitable manner of "taking the rough edge off," or bringing down the superabundant spirits of horses that have been confined to the stable for some time by weather or other similar cause producing restiveness, and is peculiarly adapted for exercising harness-horses where it may not be safe or expedient to ride them.

WORK.

The master on the road or in the field using his bearer for convenience or pleasure, will do him less injury in a day than a thoughtless ignorant servant will contrive to accomplish in an hour when only required to exercise the beast.

To the advice already given, never to allow your horses to be galloped or cantered on a hard surface, it is well to add, refrain from doing so yourself. On the elastic turf these paces do comparatively little harm; but for the road, and indeed all ordinary usage, except hunting or racing, the trot or walk is the proper pace. My impression coincides with that of many experienced sportsmen, that one mile of a canter on a hard surface does more injury to the frame and legs of a horse, than twenty miles' walk and trot: for this reason, that in the act of walking or trotting the off fore and near hind feet are on the ground at the same moment alternately with the other two, thus dividing the pressure of weight and propulsion on the legs more than even ambling, which is a lateral motion; while in anything approaching to the canter or gallop, the two fore feet and legs have at the same moment to bear the entire weight of

man and horse, as well as the jar of the act of propulsion from behind.

Ambling is a favourite pace with the Americans, whose horses are trained to it; also with the Easterns. It is, as before mentioned, a lateral motion, much less injurious to the wear and tear of the legs than either canter or gallop on the hard road, the off fore and hind being on the ground alternately with the near fore and hind legs.

Though unsightly to an Englishman's eyes, this pace is decidedly the easiest of all to the rider, and may be accelerated from four to six or eight miles an hour without the least inconvenience. Some American horses are taught to excel in this pace, so as to beat regular trotters.

By trotting a horse you do him comparatively little injury on the road; but observe the animal that has been constantly ridden by ladies (at watering-places and elsewhere), who are so fond of the canter: he stands over, and is decidedly shaky on his legs, although the weight on his back has been generally light. Observe, on the contrary, the bearer of the experienced horseman; although the weight he had to carry may have been probably what is called "a welter," *his legs are right enough.*

The softness of the turf, as fitting it for the indulgence of a gallop, is indicated by the depth of the horse-tracks; there is not much impression left on a hard road.

It should be always borne in mind that "it is *the pace that kills*," and unless the wear and tear of horse-flesh be a matter of no consideration, according as the pace is increased from that of five or six miles per hour, so

should the distance for the animal's day's work be diminished.

For instance, if you require him to do seven miles in the hour *daily*, that seven miles must always be considered as full work for the day; if you purpose going eight miles per hour, your horse should only travel six miles daily at that rate; if faster still, five miles only should be your bearer's limit; if at a ten-mile rate, then four miles; or at a twelve-mile rate, three miles per day. But of course such regulations apply to *daily* work only, as a horse is capable of accomplishing a great deal more without injury, if only called upon to do so occasionally.

A man may require to do a day's journey of thirty miles, or a day's hunting, and such work being only occasional, no harm whatever to the animal need result; but about eight or ten miles a-day at an alternate walk or trot (say six-miles-an-hour pace) is as much as any valuable animal ought to do if worked regularly.

No horse ought to be hunted more than twice a-week *at the utmost*.

The work of horses, especially when ridden, ought to be so managed that the latter part of the journey may be done in a walk, so that they may be brought in cool.

A horse in the saddle is capable of travelling a hundred miles, or even more, in twenty-four hours, if required; and if the weight be light, and the rider judicious, such feats *may* be done occasionally without injury: but if a journey of a hundred miles be contemplated, it is better to take three days for its performance, each day's journey of over thirty miles being divided into two equal portions, and got through early

in the morning and late in the afternoon; the pace an alternate walk and trot at the rate of about five miles an hour; and it is good for both horse and man that the latter should dismount and take the whole, or nearly the whole, of the walking part on his own feet, thus not only relieving his bearer from the continual pressure of the rider's weight on the saddle on his back, but as a man when riding and walking brings into play two completely distinct sets of muscles, he will, though a little tired from walking, find himself on remounting positively refreshed from that change of exercise.

This recommendation is equally applicable to the hunting-field at any check, or when there is the least opportunity. So well is the truth of the above remark known to the most experienced horsemen, that some of them, steeplechase riders, make it a practice before riding a severe race to walk rapidly from five to ten miles to the course, in preference to making use of any of the many vehicles always at their disposal on such occasions.

It is only surprising that the expediency of making dragoons dismount and walk beside their horses on a march, at least part of the way, for distances of one or two miles at a time, is not more apparent to those in authority (many of them practical men), in whose power it lies to make a regulation so very salutary for both man and horse. The more the beneficial effect of such an arrangement is considered, the more desirable it would appear to be, especially in dry weather. The great occasional relief to an overweighted horse of being divested of his rider now and then, would rather serve than injure the latter, on account of the variety

of exercise, as before remarked, while his handling of the horse would decidedly be enlivened by the change.

Signals of Distress on increased pace.—Prominently may be mentioned a horse becoming winded, or, as sportsmen call it, having "bellows to mend," which in proper hands ought seldom to occur, even in the hunting-field, as there are tokens which precede it—such as the creature hanging on his work, poking his head backwards and forwards, describing a sort of semicircle with his nose, gaping, the ears lopping, &c.

Some horsemen are in the habit of giving ale or porter (from a pint to a quart of either) to their horses during severe work. This is not at all a bad plan, if the beast will take it; and as many masters are fond of petting their animals with biscuit or bread, a piece of either being occasionally soaked in one of the above liquids when given, will accustom the creature so trained to the taste of them.

After the work is over a little well-made gruel is a great restorative; and when a long journey is completed, a bran-mash might be given, as mentioned under the head of "Feeding," page 22.

One of the worst results to be dreaded from a horse going long journeys daily, is fever in the feet (page 123), which may be obviated by stopping the fore feet directly they are picked and washed out at the end of each day's journey.—*See* page 13.

After a long journey, it would be desirable to have the animal's fore shoes *at least* removed.

The saddle ought not to be taken off for some time after work; the longer it has been under the rider, and the more severe the work, the longer, comparatively, it should remain on after use, in order to avoid that

frightful result which is most likely to ensue from its being quickly removed—viz., sore back. With cavalry, saddles are left on for an hour or more after the return from a field-day or march.

A numna or absorbing sweat-cloth under the saddle is in cases of hard or continued work a great preservative against sore back.

When an extraordinary day's work has been done, after the horse is cleaned and fed he should be at once bedded down, and left to rest in quiet, interrupted only to be fed.

BRIDLING.

Every horseman before he mounts should observe closely whether his horse is properly saddled and bridled.

Bits must be invariably of wrought steel, and the mouthpiece *in all bits* should fit the horse's mouth *exactly* in its width : the bit that is made to fit a sixteen-hands-high is surely too large for a fourteen-hand cob. The bit ought to lie just above the tusk in a horse's jaw, and one inch above the last teeth with a mare.

It must be adapted to the mouth and temper of the horse as well as to the formation of his head and neck. A riding-master, or the rider, if he has any judgment, ought to be able to form an opinion as to the most suitable bit for an animal.*

The ordinary *Bridoon* (or Double bridle, as it is called

* It has been truly said by the well-known Mr Elmore, that there is a key to every horse's mouth, requiring only proper hands to apply it.

in the North) is best adapted to the well-mouthed and tempered horse, and is the safest and best bit for either road or field. Unfinished gentlemen as well as lady equestrians, when riding with double reins to a bridoon bit, are recommended to tie the bit rein evenly in a knot on the horse's neck (holding only the bridoon-rein in the hand), provided his temper and mouth be suitable to a snaffle. This is a practice pursued by even good and experienced horsemen where the temper of a horse is high, in order to have the bit to rely upon in case he should happen to pull too hard on the bridoon or snaffle, which otherwise would be quite sufficient and best to use alone.

The *Curb*, when used, should be strong and tight; it should invariably be supported by a lip-strap, an adjunct that is really most essential, but which grooms practically ignore by losing. The object of the lip-strap is to prevent the curb, if rather loose, from falling over the lip, thus permitting the horse to get hold of it in his mouth and go where he pleases; it also guards against a trick some beasts are very clever at, of catching the cheek or leg of the bit in their teeth, and making off in spite of the efforts of any rider. If the curb be tight, the lip-strap is equally useful in sustaining it horizontally, and preventing its drooping to too great a pressure, thus causing abrasion of the animal's jaw. The curb *ought* to be pretty tight, sufficiently so to admit one finger between it and the jaw-bone.

The *Snaffle* with a fine-mouthed horse is well adapted for the field—the only place where I would ever dispense altogether with the curb, and then only in favour of a fine-mouthed well-tempered beast disposed to go coolly at his fences.

On the road a horse may put his foot upon a stone in a jog-trot, or come upon some irregularity; and unless the rider has something more than a snaffle in his hand, he is exceedingly likely to suffer for it. Many a horse that is like a foot-ball in the field, full of life and elasticity, and never making a mistake, will on the road require constant watching to prevent his tumbling on his nose.*

At the same time, a horse should by no means be encouraged to lean on the bit or on the rider's support, which most of them will be found quite ready to do; a disposition in that direction must be checked by mildly feeling his mouth (with the bit), pressing your legs against his sides, and enlivening him gently with the whip or spur.

The *Martingal.*—The standing or head martingal is a handsome equipment—safe and serviceable with a beast that is incorrigible about getting his head up, but should be used in the street or on the road only.

The *Ring-Martingal* is intended solely for the field with a horse whose head cannot be kept down; but it requires to be used with nice judgment, and handling of the second or separate rein, which should pass through it, especially when the animal is in or near the act of taking his fences, when, with some horses, comparative freedom may be allowed to the head, which should, however, be brought down to its proper place directly he is safely landed on his legs again by the use of this

* The famous Irish jumper "Distiller" was notorious among many other good fencers as a bungler on the road, though he would jump a six-foot-six stone wall with ease, sporting two large broken knees in consequence of his performance in that line; and in fencing he was also first-rate.

second martingal-rein, which is attached to the bridoon of that bit.

N.B.—If this second rein be attached to the snaffle by buckles (and not stitched on as it ought to be), the buckles of the rein should be defended from getting into the rings of the martingal by pieces of leather larger than those rings. Most serious accidents have occurred from the absence of this precaution: the buckle becoming caught in the ring, the horse's head is fixed in one position, and not knowing where he is going, he proceeds, probably without any control from the rider, till both come to some serious mishap. The rein stitched to the ring of the bit is the safest.

The *Running-Rein*, or other plan of martingal (from the D in front of the saddle above the rider's knee through the ring of the snaffle to his hand), should only be used by the riding-master or those competent to avail themselves of its assistance in forming the mouth of a troublesome or untrained animal. Some experienced horsemen, however, when they find they cannot keep the nose in or head down with ordinary bits, instead of using a martingal of any denomination, employ (especially in the field) with good effect a ring, keeping the *bridoon* or snaffle-reins under the bend of the neck; or a better contrivance is a bit of stiff leather three or four inches long, with two D's or staples for the reins to pass through on each side.

The *Chifney Bit* is the most suitable for ladies' use, or for timid or invalid riders: it at once brings up a hard-pulling horse, but requires very gentle handling. I have known more than one horse to be quite unmanageable in any but a Chifney bit.

The more severe bits are those that have the longest

legs or cheeks, giving the greatest leverage against the curb. By the addition of deep ports on the mouth-piece much severity is attained, which can be increased to the utmost by the addition of a tight noseband to prevent the horse from easing the port by movement of his tongue or jaws.

It is almost needless to observe, that the reverse of the above will be the mildest bits for tender-mouthed, easy-going horses.

Twisted Mouthpieces are happily now almost out of fashion, and ought to be entirely discountenanced; their original intention was to command hard-mouthed horses, whose mouths their use can only render harder.

The *Noseband*, if tightened, would be found very useful with many a hard-pulling horse in the excitement of hunting, when the bit which would otherwise require to be used would only irritate the puller, cause him to go more wildly, and make matters worse. I have known some pullers to be more under control in the hunting-field with a pretty tight noseband and a snaffle than with the most severe curb-bit.

The *Throat-lash* is almost always too tight. Grooms are much in the habit of making this mistake, by means of which, when the head is bent by a severe bit, the throat is compressed and the respiration impeded, besides occasioning an ugly appearance in the caparison.

It may be remarked also that, if not corrected, servants are apt to leave the ends of the bridle head-stall straps dangling at length out of the loops, which is very unsightly: the ends of the straps should be inserted in these loops, which should be sufficiently tight to retain them.

SADDLING.

A *Saddle* should be made to fit the horse for which it is intended, and requires as much variation in shape, especially in the stuffing, as there is variety in the shapes of horses' backs.* An animal may be fairly shaped in the back, and yet a saddle that fits another horse will always go out on this one's withers. The saddle having been made to fit your horse, let it be placed gently upon him, and shifted till its proper berth be found. When in its right place, the action of the upper part of the shoulder-blade should be quite free from any confinement or pressure by what saddlers call the "gullet" of the saddle under the pommel when the animal is in motion. It stands to reason that any interference with the action of the shoulder-blade must, after a time, indirectly if not directly, cause a horse to falter in his movement.

N.B.—A horse left in the stable with his saddle on, with or without a bridle, ought always to have his head fastened up, to prevent his lying down on the saddle and injuring it.

Girths.—When girthing a horse, which is always done upon the near or left-hand side, the girth should be first drawn tightly towards you under the belly of the horse, so as to bring the saddle *rather* to the off side on the back of the beast. This is seldom done by grooms; and though a gentleman is not supposed to girth his horse, information on this as well as on other points may happen to be of essential service to him;

* I may recommend Gibson, 6 Coventry Street, Leicester Square, as an excellent, intelligent, and experienced saddler.

for the consequence of the attendant's usual method is, that when the girths are tightened up, the saddle, instead of being in the centre of the horse's back, is inclined to the near or left-hand side, to which it is still farther drawn by the act of mounting, so that when a man has mounted he fancies that one stirrup is longer than the other—the near-side stirrup invariably the longest. To remedy this he forces down his foot in the right stirrup, which brings the saddle to the centre of the animal's back.

All this would be obviated by care being taken, in the process of girthing, to place the left hand on the middle of the saddle, drawing the first or under girth with the right hand till the girth-holder reaches the buckle, the left hand being then disengaged to assist in bracing up the girth. The outer girth must go through the same process, being drawn under the belly of the horse from the off side tightly before it is attached to the girth-holder.

With ladies' saddles most particular attention should be paid to the girthing.

(It must be observed that, with some horses having the knack of swelling themselves out during the process of girthing, the girths may be tightened before leaving the stable so as to appear almost too tight, but which, when the horse has been walked about for ten minutes, will seem comparatively loose, and quite so when the rider's weight is placed in the saddle.)

Stirrup-Irons should invariably be of wrought steel. A man should never be induced knowingly to ride in a cast-metal stirrup, any more than he ought to attempt to do so with a cast-metal bit.

Stirrup-irons should be selected to suit the size of the rider's foot; those with two or three narrow bars

at the bottom are decidedly preferable, for the simple reason, that in cold weather it is a tax on a man's endurance to have a single broad bar like an icicle in the ball of his foot, and in wet weather a similar argument may apply as regards damp; besides, with the double bar, the foot has a better hold in the stirrup, the rings being, of course, indented (rasp-like), as they usually are, to prevent the foot from slipping in them.

This description of stirrup, with an ankle-pad, is preferable for ladies to the slipper, which is decidedly obsolete.

Latchford's* ladies' patent safety stirrup seems to combine every precaution for the security of fair equestrians.

A balance-strap to a side-saddle is very desirable, and in general use.

Where expense is no object, stirrups that open at the side with a spring are, no doubt, the safest in case of any accident.

With regard to *Stirrup-Leathers*, saddlers generally turn the right or dressed side out for appearance; but as the dressing causes a tightness on that side of the leather, the undressed side, which admits of more expansion, should be outside—because, after a little wear, the leather is susceptible of cracks, and the already extended side will crack the soonest. The leather will break in the most insidious place, either in the D under the stirrup-iron, where no one but the servant who cleans it can see it; or else, perhaps, where the buckle wears it under the flap of the saddle. Stirrup-leathers broken in this manner have caused many accidents.

* Latchford, 11 Upper St Martin's Lane, London, and all saddlers.

Invariably adjust your stirrup-leathers *before mounting.*

To measure the length of the stirrup-leathers of a new saddle, place the fingers of the right hand against the bar to which the leathers are attached, and, measuring from the bottom bar of the stirrup up to the armpit, make the length of the leathers and stirrups equal to the length of your arm, from the tips of the fingers to the armpit. Before entering the field, in hunting or crossing country, draw up the leathers two or three holes shorter on each side, and when starting on a long journey it is as well to do the same, to ease both yourself and your bearer.

Clumped-soled Boots occasion accidents. If, in case of yourself or your horse falling, the foot catch in the stirrup, a boot with such a sole may prevent its release.

The *Crupper*, though now obsolete for saddles, except in military caparison, would be decidedly beneficial in keeping the saddle in its proper place *on long journeys*, especially where, from the shape of the animal, the saddle *will* came too much forward, interfering with the action of the shoulders, and throwing the weight of the burden unduly on the fore-quarters, thus increasing the odds in favour of a tired beast making an irretrievable stumble.

The dock of the crupper should be seen to that it is soft, and free from crusted sweat and dandriff, which would naturally cause irritation and abrasion of the tail. It should be always kept well greased ready for use.*

* All the foregoing observations on saddlery apply equally to ladies' saddles. Marked attention should be paid before they mount to the girths, which should be very tight, to prevent the

The *Military Crupper*, according to the rules of the service, should be so loose between cantel and dock as to admit of a man's hand being turned with ease between the horse's back and the strap. If the crupper be intended merely for ornament, such a regulation has hardly any meaning, for it cannot be considered ornamental to see an apparently useless piece of leather dangling at one side over a horse's hip; and if the intention be to make it useful, to keep the saddle from going too forward on ill-formed horses,* or in case of strong exertion, it is obvious that a loose strap (according to orders) could hardly serve any such purpose. If the crupper be for use, it would appear that after the saddle is placed in its proper position on the animal's back (the crupper being left at its full length for this purpose), and previous to girthing, it should be shortened so as to *retain* the saddle in that place under any circumstances,—not, however, that the crupper should be so tightened as to inconvenience the beast, and half cut his tail off; it will be tight enough to serve its purpose if *one* or *two* fingers can be easily turned under the strap.

The *Breastplate* may be necessary in hunting or steeplechasing with horses that are light behind the

saddle from turning, a lady's weight being often altogether on one side.

* As a good shoulder, such as will keep a saddle in its place, is one of the great essentials in a gentleman's hack, or indeed in an officer's charger, giving him leverage to lift his legs safely and showily, it stands to reason that not many such will pass into the ranks at the Government price for remounts, which, however, is *ample* to supply animals suitable for the service, and does so in regiments where the class of horse provided at once proves that the whole sum allowed is invested in the remount itself, and proper judgment exercised in purchasing.

girth, or what is vulgarly called "herring-gutted," and is used to prevent the saddle from getting too far back, or, as the grooms say, the horse "running through his girths." Animals trained to such trying work as steeplechasing, or even hunting, will become much smaller in the carcass than a trooper or an ordinary gentleman's hack.

With dragoons this part of the equipment is generally ill-adjusted, as if to correspond with the inefficient arrangement of the crupper, the breast-straps being often *too tight*. Frequently, during manœuvring in the field or the riding-school, I have seen breast-straps burst in consequence of their tightness; and indeed it stands to reason they can thus but interfere with a horse's action in leaping or making more than ordinary exertion. Their tightness not only renders discomfiture imminent, but must drag the saddle forward out of its place.

Altogether it might be desirable that commanding officers of some cavalry regiments would study the pose on horseback of Marochetti's sculptured dragoons, or those of other eminent artists. The result would probably be a marked improvement in the position of the saddle, and, consequently, in the general *coup d'œil* of our cavalry, who, however, notwithstanding such minor defects, have always maintained their superiority in horsemanship, as well as in efficiency, over any other cavalry in the world.

RIDING.

The seat, method of holding the hands, &c., should be left to the riding-master,* with a friendly admonition to the learner to avoid the "stuck-up," one-handed principle to a great extent, and to take a lesson whenever opportunity occurs from one of the "great untaught," † and, observing their ease and judgment in the management of their bearers, endeavour to modify their own horsemanship accordingly.

Kindness goes far in managing these noble animals.

How is it that many horses that are unmanageable with powerful and good horsemen, can be ridden with perfect ease and safety by ladies? The first thing a lady generally does after mounting, is to reassure her steed by patting, or, in riding-school language, "making much of him," taking up the reins with a very light hand, and giving him his head, whereas a man usually does the very reverse; he takes a commanding hold of the reins, presses his legs into the horse as the signal for motion, perhaps with a rasp of both spurs into his sides, indicating no great amiability of temper —a state of things very likely to be reciprocated by a high-spirited horse.

As before observed, every man ought himself to be

* It might not be out of place to mention, for the information of those who desire to be well taught, that, to my own knowledge, Allen's, in Seymour Place, Bryanstone Square, and Clarendon's, in Great Brunswick Street, Dublin, are excellent riding-schools.

† Those who probably have never received a professional riding-lesson in their lives, but still, from intuitive taste, ride with ease and ability.

able to judge whether his horse is properly saddled and bridled. I must still inveigh against misplacement of the saddle, which grooms, it will be remarked, usually place too far forward—a mistake which is of more consequence than is generally considered.

Take a dragoon, for instance, weighing, with arms, accoutrements, and kit, from fifteen to twenty stone; this weight, if allowed to fall unduly on the forequarter, must help to founder the charger, and bring him into trouble on the first provocation. Let him make the least stumble, and the weight of his burden, instead of being back in its proper place, with the man's assistance there to help him up, is thrown forward, keeping the beast tied down, and preventing his rising. But, taking appearances into consideration, the forward placement of the saddle is most ungraceful, reminding one of the position of an Eastern driving an elephant, seated on his bearer's neck.

I have seen the *tout ensemble* of a magnificent cavalry regiment strikingly deteriorated by the ungraceful and absolutely unhorsemanlike misplacement of the saddles, and consequently of the men — though the military regulation on the subject is fair enough, directing a saddle to be placed a handbreadth behind the play of the shoulder. This would, perhaps, be a slight excess in the other direction, were it not considered that, in all probability, out of a hundred troop-horses so saddled, ninety-nine would be found after an hour's trotting to have shifted the saddle *forward*, for one on whom it would have remained stationary or gone back.

It is well known that no rider should ever go fast down-hill on the road, or round a corner, especially on

pavement; but in the field, hunting or racing, down-hill is the place to make play.

In the absence of an attendant to hold for mounting, some horses are allowed to contract a habit that is liable to cause accidents, of starting before the rider is comfortably seated in the saddle. Prevent this bad fashion by gathering the snaffle-rein (not the curb) tightly up before mounting, and when across the saddle, and before the right leg is in the stirrup, check any effort to move off.

When a horse is alarmed, nothing so effectually reassures him as speaking to him. I have myself experienced the efficacy of gently using my voice on two or three occasions, when I admit having been run away with for a short time.

Though a horse ought never to be allowed to have his own way, his rider should try every means before resorting to actual punishment or fight, which may be sometimes unavoidable as the only chance of conquest.

An animal requiring such treatment should be handed over to the rough-rider for subsequent teaching, if not disposed of for more suitable employment than that of a gentleman's horse.

Your bearer should not be allowed to keep a perpetual lean upon your hand, more particularly when walking. Should he stumble while thus leaning, he is not likely to recover himself, but will fall helplessly on his knees.

Keep him as self-dependent as possible, though not with a rein so slack as to leave him to himself altogether. It is the business or amusement of the rider to be on the alert for all casualties.*

* Talking of a horse being self-dependent in his movement on the road, puts me in mind of a challenge once accepted by a very prac-

To make a horse change his foot in canter, if you find it difficult to do so by merely using hand and leg, turn him *as if* to circle towards that side that you require the foot to lead—he will use the foot forward that you wish in order to prop himself in turning. Thus, if you circle round to the right, he will lead with the off fore foot, and if you turn to the left, the near fore will be advanced.

In using a curb, the rider should remember that if it is properly placed, with a fair leverage, rough handling of the lower or bit rein may drive a fine-tempered animal into a state of great irritation, or even prove an incentive to rearing ;* and directly anything like this effect seems to be produced, that rein should be eased, and the bridoon-rein borne up.

In fencing, the snaffle or bridoon bit and rein *only* ought to be used ; *this the rider should particularly bear in mind.* A rider with a hold of the curb-rein in fencing, getting the least out of his equilibrium, or giving

tical horseman, to ride a notorious stumbler (reduced by this defect to mere farm work) three times round Stephen's Green, Dublin (a distance of over three miles), without falling. Given his choice of bits, some being of the severest kind, he rejected them all, desiring the groom to get him a common hemp halter, and with this simple head-gear, riding bare-backed, he accomplished the distance without the slightest mishap, and thereby won a large bet. The groom, however, resumed the use of the bit to ride the horse home (now feeling sufficient confidence to trust himself on his back instead of leading him), when the animal fell on his knees before he had gone a hundred yards.

* The incautious use of that rein, which has leverage on the curb, is very apt, with young unformed horses, or such as have been only accustomed to the bridoon or snaffle, to induce a notion of rearing, especially in anything of a rough attempt to "rein back" with ; indeed, this latter point of training should be accomplished with the bridoon only.

an involuntary check to the curb, may put any well-mouthed animal entirely out of his own way, preventing his jumping safely and confidently, and probably causing accidents. One of several reasons why the Irish horses excel in fencing is, that it is very much the custom in that country to use snaffles in cross-country riding. The curb-rein may be taken up, if necessary, after the jump is over. (Some horses, however, are such violent pullers, that, in the full tilt of going to hounds, where the country is close and fencing frequent, it is almost impossible to avoid using the curb-rein occasionally in the act of jumping.)

While touching on cross-country riding, it may be observed that many men who ought to know better, often make a serious mistake in not leaving hunters more to themselves than they do when going at and taking their fences. Horses vary in their mode of progression; and whether the gait be slow or fast, anything of a trained animal, when interfered with under these circumstances, will be put out of his own way (which is generally best suited to his peculiar temper or ability), in placing his legs advantageously to make his jump with safety.*

* One can scarcely repress a smile on hearing cross-country misfortunes related, as they frequently are, in pretty nearly the following terms:—"I found my horse going sluggishly at his fences, and one place looking rather biggish; I shook him up with the bit, and put both heels into him to rouse him, but somehow or other the brute took off too soon, caught his fore feet, I suppose, against something, and came such a cropper on the other side!" or, "The beast kept going at such a bat at his fences that I brought him to book with my hands down, and with a good pull steadied him, but the brute with his awkwardness missed his footing on landing, dropped his hind legs into the brook somehow, and fell back on me, giving me a regular sousing!"

Let your horse, if he is anything of a fencer, choose his own way and pace to take his jumps.

It would be well, for cross-country horsemen more especially, to bear in mind Sir Francis Head's observation, as applied to riders as well as horses, that "the belly lifts the legs," meaning, I take it, that if man or horse is out of tone from derangement of the stomach or general debility, he cannot be up to the mark or fit for any physical exertion. It is well known to steeplechase riders and men who ride straight to hounds, that occasionally, in consequence of inertion, indulgence, or dissipation, having deranged the stomach or nervous system, a rider will be done up before his steed, who, oppressed with a comparatively dead weight knocking about on his back, will himself follow suit from want of being held together, and probably come a burster at some jump before the finish.

To a practical horseman the act of standing in the stirrups will suggest itself as a matter of expediency to ease himself, when the horse is pulling hard at or near his full galloping pace.

The great advantage of a rider easing his bearer by walking up-hill is treated of under the head of "Work," page 36.

When a rider finds his horse going tender or lame, he ought *immediately* to dismount and examine his feet. If a stone has become bedded between the clefts of the frog, or got between shoe and sole, and a picker does not happen to be at hand, a suitable stone should be sought wherewith to dislodge the one in the foot. If no stone in the foot can be discovered as causing the lameness, closer examination must be made in search of a nail, a piece of iron or rough glass, or other damage to the sole. If no apparent means of relief present itself, the sooner the beast is led to the nearest place where a proper examination of the foot can

take place the better.* For the amount of work a horse can do, see remarks on that subject, under the head of "Work," page 35; and to avoid broken knees, see hints on that subject, pages 51 and 131.

Mounting of Lady in Side-Saddle.—The mounter, being as close as possible to the animal, should place his right hand on his right knee, and in it receive the lady's left foot. When she springs, she should straighten her left knee, at the same time having in her right hand the reins, with a fast hold of the middle crutch, and her left hand on the mounter's shoulder to help her to spring up.

HARNESSING.

The General Mounting, whether of brass or silver-plated (to correspond with the mountings of the carriage), or with leather-covered buckles, is all a matter of taste, the leather being, however, the least durable.

A Dry Harness-Room is indispensable, in which there should be shallow presses with pegs, but no shelves; otherwise, coverings should be provided for harness and saddles to preserve them from flying dust.

Style.—In pairing horses for draught, if one be rather larger than the other, the larger should be

* In obscure lameness, to aid towards discovery of the affected part, having first decided which leg or foot is diseased, it is not a bad plan to walk the animal into a stream above the knees and take him out again (or have water dashed at once fully over the member), then kneel and closely observe which spot on the surface dries first—that which does so will probably prove to be the most inflamed part.

placed on the near or left side, as the left-hand side of the road being that on which vehicles travel, the near-side horse will generally be going an inch or more lower than the off-side one, and the difference of size in the pair will be less perceptible.

If the animals are of an even size, and one be more lazy than the other, that one should be placed at the off side, being thus more conveniently situated to receive gentle reminders from the whip without observation. If one of the pair *will* carry his head higher than the other, *his* coupling-rein * should run under that of the animal that leans his head the most, so as to bring their heads as much on a level as possible. An ivory ring to run the coupling-reins through looks and acts well.

Both manes should be trained to flow either in or out from the pole; the latter way is probably preferable.

Horses left to *stand harnessed* in the stable should be turned round in the stalls and fastened with the T's of two pillar-reins passed through the rings of the bridoon of bit. Should there be no pillar-reins in pairs belonging to the stern-posts of each stall, tie the horses' heads up with the rack-rein so as to prevent their lying down in the harness.

As a maxim, never leave a bridle on in the stable, unless in the case where the head can be sustained by a pair of pillar-reins from the stern-posts. Most serious accidents have occurred through neglect of this rule.

* In double harness, to increase your power in turning, shorten the coupling-reins; and to ease your horses, lengthen these to let their heads work more straight forward.

In *Yoking* or "*putting to*," the shafts of a vehicle must never be left on the ground while the horse is being backed into them. If the shafts touch him he will probably kick, or he may injure by standing on them.

Traces.—Great care should be taken in adjusting these to prove that they are of an even length, as the least deviation in equality is liable by pressure on one side to produce a sore on the neck, under the collar of the horse that happens to be on the side of the shortest trace.—*See* "Jibbing," page 86.

The buckles of all traces and backbands ought to be provided with detached pieces of leather cut square the width of those straps, and placed under the buckles, the tongues of which pass through these bits of leather; the straps thus protected from being cut by the buckles will wear nearly thrice as long as otherwise, and there is nothing unsightly in the arrangement.

In all cases, draught-horses should be placed close to their work—*i. e.*, the traces should be as short as will just allow of the animal's going down an inclination at a brisk pace without coming in contact with the carriage, the britching for single, and the pole-chains for double harness, being tightened in proportion to keep the carriage from running on them down-hill.

For *Pole-Chains* and *Swinging-Bars*, see page 72.

The *Hames.*—In order to divide the draught or pressure of the traces on the shoulders a little, the hames might be furnished with scroll draught eyes; this, however, has become unfashionable from being much used by cabmen, and for rough draught.

Hames Top-Straps.—Care should be taken that these are perfectly sound and strong, especially in

double harness, where the strain of stopping and backing the carriage of necessity comes upon them.

Britching and *Kicking-Strap.*—It is better in single harness to have the britching made with side-straps attached to the buckle or tug of the *back-band*, and not to pass over the shaft (confined there by a loop or staple as is usual). These side-straps can be tightened or loosened according to the size of the animal, and if properly adjusted, effectually prevent any carriage from running on the quarters. Across the horses' hips and through these straps, confined by square metal D's, passes the kicking-strap, which is attached to the tugs on the shafts by buckles. This caparison, instead of being unsightly, is positively more elegant than the ordinary shaped britching, and provides a kicking-strap at all times with the britching.

The kicking-strap for double harness must always be inelegant, nor can it be made as effectual as that for single harness, for which reason, if for no other, a kicking horse should never be used in double harness under a gentleman's carriage.

Britching is not generally used for double harness; but where appearances are not regarded, it finds place amongst various other contrivances available to make kickers, jibbers, bolters, plungers, and runaways, work as placidly as "if they couldn't help it."*

The *Terret-Pad* must be left to the taste of the owner and saddler, with an observation, that in single harness it should be ascertained that the back-band has always free play through it, and as a precaution, it

* Any one desiring hints in that line can have the benefit of my experience in dealing with such cattle, by applying to my publisher.

is desirable that in single harness the belly-band be always wrapped once round at least one of the shafts before the tug, whether the draught be on four or on a pair of wheels. Neglect in this particular has often occasioned accidents. The terret-pad is generally placed too far forward ; the shortening of the crupper remedies this.

The *Collar*.—More care and judgment are necessary in shaping the stuffing of the collar to fit a horse than

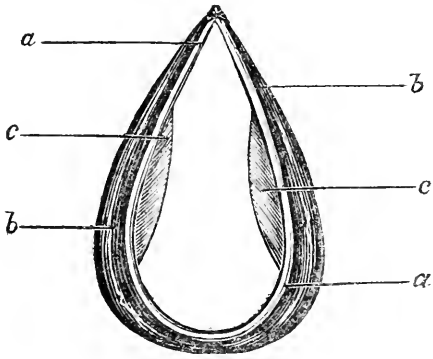

FIG. 1.—Front View of a Collar, with the stuffing placed as it should be for wear with ease and safety.
a a, rim of collar all round.
b b, stuffing projecting round outside of rim.
c c, stuffing to project inside at back of rim, for the purpose of tightening the collar on the neck in that situation, and thus obviate abrasion.

for any other part of the harness. The collar should not press either on the mane or on the under part of the neck round the gullet ; the pressure should be on each side of the neck at *c c* in figure. Collars to fit the ordinary run of horses ought to be shaped thus, by the padding exclusive of the rim. The shape of the rim is comparatively immaterial, but it must be strong to retain the collar in shape. Any collar, be it ever so well shaped, should be tried on the horse's neck before it is taken into wear, to make sure that it is neither too large nor too small.

Some horses' heads are large in proportion with the size of collar they require ; in such cases, out of com-

passion for the poor animal over whose head the small collar has to be forced at the risk of injuring his eyes, the collar, which is generally closed, should be made open at the top to fasten with buckle and strap.

Under ordinary circumstances the open collars are not preferable, as the opening and closing weakens the rim, and is likely to put them out of shape ; but as grooms have a fashion of putting the collar on with the rigid hames tightly buckled round it, the whole process of forcing a small closed collar over a beast's larger head is so repulsive to him that in time he learns to dread the very sight of a collar. The plan of putting on the collar with the hames attached to it should never be permitted.

Saving-Collar, and description of make.—This is generally formed by harness-makers of basil with quilted padding. More serviceable than this will be found the saving-collar cut of single leather, from the soft or belly part of the cow-hide. A breast-strap is placed at the bottom of the collar with a loop and buckle at the end, through which the belly-band of the terret-pad passes to confine the collar.

Every owner of harness should be provided with one or two saving-collars of this description to be used where severe work is expected, on long journeys, or with animals new to harness. They should be open at the top, to fasten there with two buckles and narrow straps, the tightening or lengthening of the latter enabling it to be fitted to the horse's size. Some care is necessary to observe that the regular collar does not rub the buckles of the saving-collar against the horse's neck and make a sore.

The saving-collar should be always kept well moist-

ened with grease or oil, and carefully looked to after use, the crusted sweat and dandriff being scraped off it. In the absence of a saving-collar, the collar itself should be watched in the same respect.

The bridles generally in use for harness appear to require little or no improvement.

The *Bit* must be equally adapted to the horse's mouth, &c., as for riding (page 38), except that with harness, while to all appearance using the same kind of bit with a pair of horses, the leverage on the mouths can be altered, by placing the billets or buckle-end of the driving-reins high or low in the cheeks of each, according to the animal's temper, his bearing on it, &c.

In placing the billets in the bit, it should be borne in mind that the more use is made of the curb the more will be taken out of the horse; therefore, when a long journey or severe work has to be done, animals should be driven in snaffle, or the billets should be placed as near as possible to the mouthpiece of the bit.

Experience only can demonstrate the difference in the wear and tear of the general physique, resulting from a judicious arrangement or otherwise of the reins and bit.

Blinkers.—The question of "blinkers or no blinkers" can best be answered by the observation, that if you can find horses that may be depended upon to work safely and steadily without them they may be dispensed with; but as such animals are rare, blinkers are likely to continue in general use.

Placing crests or ornaments on blinkers, unless the latter are light and well hollowed, and kept extended in front by stiff blinker-straps, is a practice likely to be injurious to the animals' eyes; in fact, all blinkers, unless light and well hollowed, are dangerous for the

eyes, and of course the increased weight of crests and their fastenings aggravates the objection.

Heavy forehead-bands and rosettes, though ornamental, are anything but desirable, as far as the horse himself is concerned.

The *Noseband* of the harness bridle, like the riding one, can by tightening be made very useful with some descriptions of hard-pulling horses.—*See* "Noseband," page 42.

The *Breastplate*, or head-stall martingal, can be made useful in the same way.—*See* page 40.

Throat-lash.—*See* page 42.

Reins.—Saddlers generally suit the reins admirably to the work for which they are intended. A buff hand-piece with pullers is decidedly preferable to plain leather, as its roughness enables the driver to have a much firmer hold of the reins, but will become slippery in wet.

The *Bearing-Rein* is only used to keep up a horse's head and give him a showy appearance, therefore no experienced person will use it except with that object, and it is injurious in every other respect.—(*See* "Broken Knees," pages 51 and 131.)

Crupper.—This strap is intended to keep the terret-pad and back-band in their proper places, and to restrain the former from running too far forward or pressing on the withers (*see* "Sore Withers," page 140); also as a sustainer to the terret-pad against the bearing-rein when the latter is strained into its hook. Grooms have a very improper habit of leaving the whole of the hinder part of the harness suspended in one mass by the crupper-dock on a peg in the wall of the harness-room; this should not be allowed. Let the

terret-pad when not in use be always placed across a proper saddle-rack, with the britching and crupper suspended therefrom, or let them, at all events, be put somewhere by themselves.

To put on Harness.—First, while the horse's head is towards the manger, place the terret-pad loosely across the back—take hold of the tail, and carefully turn down the hair over the end of the flesh; thus grasping and holding the tail and its hair together in the left hand, with the right draw the crupper-dock over it, and adjust the latter to its place at the root of the tail, being careful *not* to leave a *single* loose hair under it. Then arrange your terret-pad in the place where it should work by shortening or lengthening the crupper-strap; which done, tighten the belly-band.*

Now turn the horse in his stall, and, your collar and hames having been hung up close at hand, slip the wide end of the former *by itself* over the head.

Leave the collar so on the narrow part of the neck till you place your hames within the collar-rim, and fasten them thereto by buckling the top strap over the narrow part or top of the collar: now turn the collar and hames round on the neck *in the direction* of the *side* over which the *mane hangs*.

Put on the bridle and attach driving-reins, temporarily doubling their hand-piece through the terrets. Fasten the horse thus harnessed to the pillar-reins till you are ready to "put to."

To take off Harness, begin by removing the reins and

* When a hame martingal strap is used, the pad belly-band should not be finally buckled until it has been passed through the other.

bridle, then take off the hames *by themselves*, then the collar, and lastly the terret-pad and crupper.

DRIVING.

In driving, a man should sit up against his work, and be thoroughly propped by his legs and feet, with the left or rein hand held well in to his body, in front of the waist. Nothing looks more ungraceful than to have the reins at arm's-length.

A driver should always be seated before any one else in or about the vehicle; and having carefully taken a firm hold of the reins in his left hand BEFORE mounting his seat, they should so remain, and never be shifted. All turns and manœuvres must be effected by the fore-finger (and thumb if necessary) of the right or whip hand, either on the off or the near side rein, according as the direction of the intended movement is towards the right or left.*

With four-in-hand, the general principle is, while allowing only a certain amount of play to the heads of your leaders, to keep your wheelers well in hand, ready for any sudden emergency, bearing in mind that it is only with them, as they are attached to the pole, that you can stop the carriage.

A driver having occasion to raise his right hand for any purpose, should first place the whip transversely under the thumb of the left or rein hand (above, but upon, one of the reins), leaving the other hand at

* Yankee fashion is to drive with a rein in each hand. This style in Ireland is humorously described as "driving with a rein in each hand and a whip in the other."

liberty; indeed, the whip should always lie in this transverse position, whether in the right or the left hand, unless when in use for correction. Many horses are very clever at watching the whip over the blinkers, and careless pointing forward with it may keep a high-spirited animal in a continual fret.

To ascertain how each horse is doing his work, judge not only by the test of the willing horse bearing more on your hand; see also how each horse keeps his traces. In whichever case they are slack, you may depend that *that* horse has no draught upon him; if tight, he is doing his share of the work, or more. A good whip will correct the defaulter so as to avoid annoying the other horse. There is no better criterion of skill in the use of the whip than this.

With the leaders in tandem and four-in-hand, and in low-seated carriages, unless the dash-board be very high, the reins are apt to get under the horses' tails. In such cases, to avoid a kicking match, no immediate attempt should be made to replace the reins while they are confined; but a *very light* lash of the whip on the leg will engage the attention of the animal, and while the tail is switched up on the touch of the lash, the reins may be released. Horses should always be kept well in hand, unless that, upon a long and tiresome journey, some consideration may be shown for what they have to go through. Under such circumstances, attention may well be directed to the manner the billets are placed in the bit (page 61).

On the level a fair pace can be maintained, but up hill no merciful man will ever press his beasts. When a heavy load has to be drawn up a sharp short hill, it is not a bad plan to *cheat* the horse out of the first half

of it by going at it with an impetus, suffering the pace to merge into a walk without further pressure as the first impetus declines.

When the ascent is long and gradual, horses should be allowed to walk the whole way, which can always be admitted of on ordinary roads, where the pace is not intended to exceed eight miles an hour, as the speed may be accelerated when the fall of ground is reached, without distressing the animals.

Let a man suppose himself to be obliged to wheel a hand-cart with a heavy burden for a given distance within a given time, on an undulating roadway, and he will soon discover the course he would pursue to effect his object: he would certainly save himself by going very slowly up the hills, and make up the time and distance with most ease by rolling the vehicle at a rapid rate down the declivities. Let the principle of working thus exemplified be always applied to the usage of horses in harness.

An old driving maxim may be added, though not recommended by the metre :—

> "Up the hill spare me;
> Down hill let me run and bear me;
> On the level never fear me."

Or,—

> "Walk me a mile out and a mile in;
> Up the hill spur me not,
> Down the hill I'll walk or trot;
> On the plain spare me not;
> In the stable forget me not."

I have driven a great deal in my life, and have never met with an accident from driving at a fair trot down a moderate hill, with plenty of road-room, and no turn-

ing to be made till after gaining the level, the team being well in hand throughout.

This observation applies equally to any number of horses ; but with tandem or four-in-hand the wheelers should be held particularly tight, and the leaders pulled back.

If, in descending a hill, the wheel can be drawn along rough stones without the horses being also brought on them, it is desirable to avail of such a drag.

In such hilly countries as Wales, Devon, &c., the constant use of a skid is indispensable. The uninitiated may not quarrel with me for reminding them of the necessity for keeping always to their own or the left side of the road (*the right on the Continent, in America, and other countries*). In turning a corner, however, if it be to the left you intend going, *before* you make your turn get from your proper side of the road a *little* towards the right, if possible, and from thence make your turn, by which means you will more easily reach the left, or your proper side, of the new route you intend to take, besides being able to see everything that is approaching on the other. To turn a right angle you must have space accordingly, and it is better to make use of that which you see insured to you than to be depending on that which is uncertain.

It is hardly necessary to remark that it is infinitely safer to make your turns at a slow pace than faster. Turning quickly round corners is reckless work, but the faster your pace the more necessary it is to get to the wrong side of the road when turning to the left *before* you make your turn to the new, or *before* entering a narrow gateway or passage. When the turn is to the right, you will keep to your own or left side of the road.

Where a narrow gateway has to be entered with four wheels, having brought your vehicle fairly in front of it, place your pole directly over the centre or bolt stone; in the absence of this guide, mark with your eye some object in the centre, and bring your pole right over it. The wheels will take care of themselves if there is at all room for the carriage.

With single harness the horse is brought direct at the gate, and kept very straight, his hind feet passing over the centre object.

In driving through crowded streets or in a narrow way, especially with vehicles coming rapidly towards you, and every prospect of a collision, take a stronger hold of your horses, and moderate your pace, remembering that, if you cannot avoid grief, the less the impetus the less the crash, if it should come. This result is amusingly exemplified by the stage-coachman's definition of the difference between the results of road and rail accidents. Coachey says, "If even an upset occur on the road, *there you are;* but if an accident takes place by rail, *where are you?*"

Remember to collect your horses well in hand before you alter your course on the road, or to cross it, in order to have them alert and handy for any emergency.

When travelling in damp weather, the roads being sticky, half wet and dry, your horse requires saving and consideration, no matter to what extent the wind may be blowing, if it goes only in the *same direction as himself.* When the roads are perfectly dry, with a light wind blowing *against* your horse, he travels under the more favourable circumstances.

Neither blinkers not bit should ever, upon any consideration, be removed from a horse while he is attached

to a carriage, whether to feed or for any other purpose. Want of caution in this respect has been a fertile source of most serious accidents.

When a horse falls irretrievably in harness, the driver should avoid leaving his seat till some assistant can go to the animal's head, who, placing his coat or some soft substance between it and the road, to prevent injury to the eyes, presses one or both knees lightly on the neck, but so as to prevent the beast from rising; which done, the driver can get down from his seat, and, availing of all the aid he can procure, frees all the harness as rapidly as possible, and, running back the carriage from the horse, assists him to rise. To disengage buckles easily in such cases, instead of dragging at the point of the strap in the usual way, force both ends of it to the centre of the buckle, which will cause the tongue to turn back, and so free the strap.

When a fall in harness occurs on slippery pavement such as some of the London streets, or in frosty weather, before the horse is permitted to make any effort to rise, some ashes, dry clay, sand, sawdust, hay or straw, or even any old rug or piece of cloth or carpet, should be so placed as to prevent him from slipping in his ineffectual and distressing endeavours to recover his legs.

Backing.—When a horse takes to backing, and danger is threatened, if you cannot get him forward, and have no assistant to take him by the head, the more rapidly you bring the brute's head to the point where he aims at bringing his tail the better. It is a bad *habit*, however, to give an animal, to allow of his being taken by the head when he is obstreperous, and should only be resorted to when quite unavoidable.

Kicking in Harness.—When there is no kicking-strap

or other means of restraint available, and an animal seems disposed to persist in kicking, the driver, *retaining his seat*, should direct some one to hold up one of the fore feet (if he finds a difficulty in doing so, doubling the knee and tying a handkerchief tightly round it) so as to prevent the foot reaching the ground, which done, the driver may help to unharness, while the other assistant takes hold of the horse's head.

Shying.—*See* page 86.

Runaways are frequently checked by sawing the mouth. In such cases, retain your presence of mind, determined to stick to the ship to the last; if you have the luck to meet with an ascent, that is your time to get a pull.

A horse that has once run away, especially if, in connection with that feat, he has met with any noisy disaster or breakage, is *never, as long as he lives, safe to drive again.* It only remains for his owner to use humanity and judgment in disposing of him.

Stubborn horses, or *jibbers*, in single harness.—On the first appearance of this disposition at starting, the neck should be examined, to discover whether the fit may not have been occasioned by indisposition to work against an ill-fitting or dirty collar, which may have produced abrasion or tenderness of the skin under it (*see* page 61). If the unpleasantness proceed from innate stubbornness in the brute, and simple means do not succeed in single harness, place him in double harness, beside a well-tempered, good worker, that will *drag him away*, starting *down-hill*. In this manner the habit, if not confirmed, will be overcome. In *extreme* cases, different appliances have been used with varied success in making the beast move on—such as a

round pebble, about the size of a hen's egg, placed in the ear, and secured with a cord tied round the latter, near the tip, or stuffing a glove in each ear. I have also seen coachmen put two or three handfuls of mud into the horse's mouth, and rub it against his palate with good effect, or tap him with a stick at the back of the fore legs, just under the knee.

Letting a stubborn beast stand for hours in harness in the spot where he has taken the fit, and, when he has become well hungered, placing a feed of corn before him and gradually walking away with it, is a dilatory proceeding sometimes resorted to, but scarcely worth mentioning.

DRAWING.

The size of horses should be in proportion to the weight and size of the vehicle and loads they are intended to move, upon the principle, easily demonstrated by experiment, that weight drags weight. For instance, a horse having to drag a cart up a hill will do so more easily with the driver on his back than otherwise, as the weight of the man assists the horse against the weight he has to move. The latter part of this argument only refers, however, to short distances, or to starting a draught.

The higher the wheels are, and the closer together, whether they be two or four, the lighter will be the draught. In fact, to render the draught as easy as possible, the axles ought to be on a level with the trace-hooks, or point of traction, or as nearly horizontal as possible with the traces and their place in the leg of the hames. It is self-evident that if a horse has to

be pulling *up*, it is like his having to raise a certain part of the weight of the carriage with every step he moves; and the faster he goes, the more injuriously does this principle operate against him.

The point of the pole-and-chain attachment should be always so elevated from its insertion in the carriage as to be on a level with the rings of the hames through which the pole-chains pass. On the point of the pole should be a revolving steel cross-tree, from eight to ten inches in length, in the ends of which the pole-chains or leathers are inserted. The working of this contrivance will, to any practical man, demonstrate its utility.

In light double harness, I much prefer using swinging-bars instead of one inflexible splinter-bar, unless for very heavy draught. Horses should be placed close to their work. For adjusting the traces to that effect, see page 57.

It should be remembered that the farther forward in a carriage the weight to be drawn is placed, the easier will be the draught on the horse. Thus the weight of one man at the extreme end of a vehicle (like a conductor on an omnibus) has as much effect on the traction as that of two men on or near the driving-seat. The deader the weight, let it be placed as it may, the greater the trial on the horse; therefore inanimate matter is heavier on traction than anything having life.

Vehicles of which the lower carriage and axles are kept braced together by a perch steadying the action of the wheels, are much the easiest on the draught. The Americans are well aware of the advantages of such a construction for encountering the roughness of

many of their roads. Not only are all their pleasure carriages, or "buggies," so constructed, but the waggons have a perch that by an admirable arrangement can be detached, to allow of the carriage being lengthened when required to carry timber or other lading. The perch, being in two pieces, can be coupled by the simple contrivance of a movable iron band and pin, giving a freedom, most desirable in a rough country, to the movement of the lower carriage. This contrivance works well, and might with advantage be applied to our military train-waggons and ambulance-carts. Horses cannot but suffer from the present construction of carriages in general use, where the axles are left unsupported and unbraced to encounter the roughness and inequalities of the road.

Axle-Boxes.—Proper lubrication of the axle-boxes is too often sadly neglected. Even Collinge's patent will not run freely without periodical aid in proportion to use, and it is no harm to make an occasional examination of the wheels of a carriage when they are lifted off the ground by setters, to see that there is thorough freedom in the working of them, by spinning them round with one's finger against the spokes. The re-application of gutta-percha or leather washers is essential, as the amount of friction by work will wear that requisite.

For a few days after the washers are replaced, the boxes should not be screwed too tightly, but subsequently they should be re-tightened.

A round tire is decidedly easier for draught than a flat-edged one.

Carriages, immediately after use, should be cleaned, or at least have water dashed over them, to prevent the

mud from drying on the paint, which can scarcely fail to deteriorate it, and give it a premature appearance of wear.

SHOEING.

Some horses are very averse to being shod, through some fright the first time of shoeing, or bad management. It is better to overcome such shyness or vice by gentleness or stratagem than by force of any kind.

Some few animals even require to be cast, or placed under the influence of the painful twitch. Before resorting to any force, however, the following means should be tried in preference to others :—Let whoever is in the habit of riding or exercising the horse *mount him* when regularly bridled and saddled, the girths being a little looser than if intended for work; ride to the side of the forge, and there let him (his rider still on his back) be shod the first time; on the second visit to the forge, if it be spacious enough, he may be ridden into it for the same purpose.

In shoeing, the smith's rule ought to be to fit the shoe to the foot, *not the foot to the shoe*, according to the general practice of those gentry.

In London and all large towns the best thing a gentleman can do is to contract with a veterinary surgeon for the shoeing as well as the doctoring of his horses.

The night previous to a horse being shod or removed, the groom should stop his feet, to soften them, and enable the farrier to use his drawing-knife properly, and without injury to that instrument.

In shoeing, any *undue* accumulation of sole may be pared away; judgment must however be used in this

particular, as the feet of some animals grow more sole than others, and superfluous increase tends to contraction, whereas care must be taken not to weaken the sole of ordinary growth. I am aware that great difference of opinion exists on this subject, but I speak from practical experience of the results of opposite modes of treatment in this particular.

If no shoes were used, the wear and tear of work would provide for the disposal of this accumulation, which, as nature is interfered with by the use of shoes, must be artificially removed.

If the frog be jagged it may be pared even, but the sound parts should not be cut away, and on no account should the smith's drawing-knife be allowed to divide the bars or returns of the foot—an operation technically called by the trade "opening the heels," to which fallacious practice farriers are pertinaciously addicted, because, in some one case of dreadfully contracted feet, they may have seen or heard of temporary relief being given by this process, with the natural result, which they ignore, of the remedy proving itself in time worse than the disease.

If farriers are allowed, they will almost invariably drive as many shoe-nails round the inside quarter as the outside. This is a lamentable mistake, especially regarding the fore feet, as the foot being thus nearly all round confined to the shoe, its proper action is interfered with, preventing a possibility of its natural and gradual expansion in action from the toe towards the heel, as the horse lays his foot upon the ground, with all weight, as well as the act of propulsion, pressed on it.

The reason for liberating the inside quarter in prefer-

ence to the outside is, that the inside, being more under the centre of gravity, will be found to expand and contract more than the outside, as will be proved by the removal and examination of a shoe that has been in use three or four weeks. On observing the part of the shoe that has been next the foot, it will be distinctly perceived that the friction of the inside quarter of the foot has worn a cavity in the portion of the shoe which has been under that quarter of the foot, while the side that has been under the outside quarter bears comparatively little evidence of friction above it.

This being an established fact, it seems desirable that the full number of nails should be driven round the outside quarter, and not more than one or two (for hunting purposes) on the inside from the toe. (Six nails altogether is the cavalry regulation.)

If your horses are not quick wearers on the road, the fore shoes should be removed within two or three weeks after shoeing (care being taken that the clenches of the nails in the hind feet are at the same time properly levelled to the hoof to prevent brushing), and let them be re-shod every five or six weeks.

In all foot ailments, whenever a horse is lame, although the disease may not apparently be in the foot, let the shoe first be carefully removed, and the shoeless foot examined by as competent a farrier as can be procured (in the absence of a veterinary surgeon), by pincers round the nail-holes, gently pressing wall and sole together, by the hammer tapping the sole, and a judicious use of the drawing-knife, to detect the possible seat of disease.

I have known a lame horse to be brought to a reputedly-experienced amateur horse-doctor, the cause of dis-

ease being so evidently inflammation of the sheath of the tendon, that the animal was ordered to be treated accordingly—viz., with cold applications ; and this not succeeding, firing the leg was resorted to, after which, the weather being suitable, it was thought expedient to let the beast have a run at grass. As a preliminary the shoes were removed, in the course of which operation a bed of gravel was found to have secreted itself in the foot of the supposed diseased leg, and the inflammation occasioned by the gravel having gone up, caused what appeared to be *marked* disease about the tendon.

Such were the results of neglecting the precautions here recommended.

Brushing, or cutting, is a very tormenting weakness in the horse, whether behind or before, and often highly dangerous in the latter case.

The ordinary practice of farriers under such circumstance is to rasp away the inside quarter of the offending hoof, as well as doubly thickening the shoe under the weakened wall, leaving the toe to extend itself forward. This is a great mistake, yielding only a temporary improvement, not at all tending towards a cure. On the contrary, it would be better to shorten the toes by degrees ; and on no account should a rasp be put near the wall of the inside quarter, in order to let it get as strong as possible towards the heel.

I would certainly allow no nails to be driven inside, but let the shoe be fastened round the outer quarter of the foot, the shoe itself being of equal thickness on both quarters as an ordinary shoe; but in putting it on, it should not be suffered to project outside the inside quarter, and the *shoes* might *here* be rasped to guard against

rough edges, which might injure the pastern of the opposite leg during work.

A strong clip should also be thrown up on the outside quarters of these shoes to catch the wall and effectually prevent them from shifting towards or projecting beyond the inside quarter, which might cause them to come in contact with the opposite pastern-joint while in motion. Until the brushing be somewhat remedied, an india-rubber ring or a bit of leather, and elastic strap round the pastern, will prevent it from receiving present injury. If the above treatment is attended to and persevered in, the probability is that in nine cases out of ten a cure will be effected in course of time.

Corns.—Every horse-owner ought to make himself acquainted with the part of the sole between the frog and the wall on the inside quarter of the fore foot, called the seat of corns (*see* pages 121 and 130), and every time that a horse is shod or removed, in paring the foot the drawing-knife should be used to clean away this cavity (without weakening the adjacent wall), where the disease originates from undue pressure of the shoe on the *inside* quarter of that susceptible spot, or from friction of the coffin-bone, on the inside of the sole, above the seat of corn. The shoe ought to rest *entirely* on the *wall* of the foot, and not on *any* part of the *sole*.

Roughing and *Frosting* is simply drawing out the old nails about the toes and replacing them with very large sharp-headed ones, called frost-nails. Horse-nails being made purposely of a soft metal, are unfit for frosting, as the heads wear down so quickly. If smiths would *steel* the *heads* of frost-nails, they would last much longer. This precaution against slipping, however, is only effectual in slight frosts. In regular frosting, the

nails are carried completely round, with the addition of sharp calkins being turned on the heels of all four feet, and sometimes also short spikes or cogs turned down from the toes; but the latter are common only in severe climates, though their use is quite as desirable in England, especially to assist horses in ascending slippery hills, where the cogs on the heels have little or no hold in the ground. Cogs or calkins should be rasped by the smith, to sharpen them, every couple of days.

Although it may be inconvenient and expensive to have horses prepared in frosty weather, it is highly necessary to do so where work is required of them. The very extraordinary exertion that is needed on the part of the animal to keep his feet when unprepared, as well as the fret to his energies, takes a vast deal more out of him in one day's work than a month's daily use would do under ordinary circumstances, not to speak of the risk of pecuniary loss from accident.

It is a most pitiable thing to see the poor beasts struggling in their high courage and good temper to do their best, for what I can only call cruel or thoughtless masters, to say nothing of the liability of the animals' breaking their knees and bringing their riders or drivers to serious trouble, smashing harness and vehicles, &c.

I have always found servants most ingenious in making objections to having their horses prepared for frost, the grand secret being their anxiety to keep them in the stable the whole time the frost lasts, that they may be saved from the trouble of cleaning either them or their caparison, carriages, &c. They will alarm you with the stereotyped objections, "tearing the horses' feet to pieces," "driving fresh nail-holes," "ripping off

shoes," "his feet won't bear a shoe after," &c. I never knew an ordinary sound foot to be reduced to such a condition, by simply changing shoes, that a good smith could not fasten a shoe on.

The only tangible objection to calkins to which attention need be drawn is, that during their use, unless the horse is moved about in his stable with great caution in cleaning or otherwise, he is apt to tread with them on the coronet of the opposite foot, which is a very serious affair, inflicting a nasty jagged wound on one of the most sensitive vascular parts of the animal.

The *Bar Shoe* going all round the foot is intended to protect weak or thrushy heels.

Wide-webbed or *Surface Shoes* are used with flat-footed, weak-soled horses: leather being often introduced above them to save the soles from being damaged by extraneous substances on the road.

High-heeled Shoes, when a horse is laid up, properly managed, prove a most effectual palliation and aid in the cure of "clap of the back sinew" (page 133).

These shoes are made with calkins (joined by a light iron bar), which should not be heavy, not more than an inch deep, and gradually reduced by the smith as the disease abates.

Steeling the Toes is necessary with quick wearers on the road; but particular cautions should be given to the smith to work the steel well into the iron, for any protrusion of this hard metal above the iron will occasion tripping, and possibly an irrecoverable fall.

Calking the hind shoes moderately on the outside quarter only, is most essential to the hunter to prevent slipping, and to give him confidence in going at his fences, and on landing. Its advantages can be well

understood by any sportsman who has experienced the difference between walking himself a day's simple shooting over soft slippery ground, or taking a ten-mile walk on a half-wet road, in each case in boots with headed nails, to enable him to have a hold in the ground, and undertaking the same exercises in boots without nails, where one wearies himself with efforts to keep his feet.

I speak as a practical man, having probably come to less grief than most others in hunting, which may be attributed mainly to the particular attention bestowed on the calking of my bearers when I was a hard goer. It seems an unimportant matter, but if looked into will be found to be far otherwise.

Tips, or half-shoes, which cover little more than the toe of a horse, leaving the heels to come in direct contact with the ground, are particularly serviceable in cases where the heels are disposed to contraction, and, from my experience, can be used without injury in any ordinary description of work while the frog is sound.

The quarters of the feet being left by their use without the usual confinement of the shoe, and being pressed to expansion on every movement of the animal, naturally become strong and extended. Tips should become gradually thinner, finishing in a fine edge towards the ends. I have seen ill-made tips calculated to lame any horse, with the ends the thickness of an ordinary shoe (though extending, which is the intention of tips, less than half-way down the foot), as if the smith who made them expected the heels to remain always suspended in mid air.

Slippers.—Regular sportsmen generally carry a spare shoe while hunting; but if a shoe comes off one of the fore feet in the field or on the road, and the rider is

not provided with a proper shoe, he should at once dismount and lead his bearer to the nearest forge, where an old shoe most approaching to the size of the foot that can possibly be found should be selected from the heap of cast ones that generally lies by in a forge, and let it be tacked on with three or four nails only, so as to serve the creature to get home, or until the proper shoe can be made.

If a shoe comes off the hind foot, and the distance from home is not above three or four miles, the animal can be led or occasionally ridden that far without injury, especially if the softest side of the road be selected for the track, the hind feet being generally much stronger than the fore.

Travelling.—The day before a long journey, look to your horse's shoes; see that the clinches are well laid down and the shoes nailed tightly. As a rule, do not have new shoes put on just before a journey, for the least carelessness in fitting or nailing them may occasion more or less lameness; should it be severe, disappointment and delay may result; while if only apparently slight at starting, and the animal endure the pain patiently during its work, the cause being in existence throughout will produce its effects only too palpably when the day's journey is over. If old shoes are nearly worn, but will last the journey, let them by all means remain on; but directly the work is over, send for any proper smith whose forge is nearest, and have them taken off in the stable. Should the forge not be at hand, the old slippers can of course be tacked on when the horse, having had his rest, is taken to be shod. All shoes, for road-work especially, should be made full long to cover the heels. It should be borne in mind

that, as the hoof grows naturally, the shoe is brought forward and thereby exposes the heels.

VICE.

In all cases where active vice, such as rearing, kicking, jibbing, plunging, has to be combated, the work of correction is half done if the horse is well tired in the first instance, or, in vulgar terms, "the fiery edge taken off him," by half an hour's rapid lungeing, with his neck well bent, chin into chest, on the softest and most tiring ground that is available. For myself, if I find a horse vicious, I never think of combating him if it can be helped, without having first reduced his vigour a little; and all horsemen who undertake to conquer any seriously bad habits are recommended to consider and adopt this practice, if indeed such is not already their custom.

Kicking, to the horseman, is a matter of very trifling consideration. He may either amuse himself by letting the ebullition expend itself, or it may be stopped by chucking up the horse's head and increasing the pace.

Kicking in Harness is a different affair, being generally the prelude to disaster, and must be guarded against. —*See* page 58.

Kicking in the Stable.—Many animals, most gentle in other respects, take inordinate fits of this practice, and generally in the dead of night, as if to make up for their usual quietude on all other occasions; most frequently they resort to the amusement without any apparent cause of irritation whatever. They will do it

when alone or when in company; while, were it not for the capped hock and otherwise disfigured legs, as well as the dilapidated stabling behind them, discovered in the morning, you would think that "butter wouldn't melt in their mouths." In other cases the habit proceeds from obvious bad temper or spite towards a neighbour. There are many cures proposed for kicking in the stable. One frequently successful is a round log of wood, four or five inches long and about two in diameter, with a staple at one end of it, through which a chain two or three inches long is passed and attached to a strap that buckles round the pastern (just above the coronet) of one hind leg, or a log in this way to each hind leg may be used if necessary. Another means is to pad all parts of the stable that can be reached by the hind feet. In many instances where this plan is adopted, the animal, no longer hearing any noise suggesting to his fancy resistance from behind, will cease kicking altogether, from no other explainable cause. For padding use some pads of hay or oaten straw, covered with coarse canvass, and nailed to all places within reach of his heels. Sometimes, where the habit is supposed to arise from spite towards a neighbour, a change of location will answer. In other cases nothing but arming all parts of the stable within reach with furze bushes, or other prickly repellants, will succeed.

It will be well, in treating this vice, to try the remedies here recommended in rotation; first with the otherwise quiet horse try the log, then the padding, the change of location, and the prickly armour in succession. It is a remarkable fact that horses seldom kick in the stable during daylight: leaving a light in

the stable through the night may therefore effect a cure where all else has failed; but as light interferes with sleep, it should be the very last resource.

Rearing is of little consequence in harness, and seldom attempted to any extent; but to the rider it is, in my opinion, the most dangerous of all bad habits to which a brute may be addicted. As I consider it almost impossible for a horseman to cure a practised rearer, my advice to the owner of such a beast would be, instead of risking his life in the endeavour, to get rid of him to some buyer, who will place him where, in the penal servitude of harness, he may perhaps eke out a useful existence. However, should accident place you on a rearer, directly he rises lay hold of the mane with one hand; this, while at once throwing your weight forward where it should be, will enable you also to completely slacken the reins, which is important.

No one need be ashamed to adopt this plan. I have seen the best riders do so.

Vicious rearing may, on its first manifestation, be sometimes checked by a determined and reckless rider giving a well-directed blow on the ear with some bothering missile; but this is a venturesome proceeding, and only in emergency should it be resorted to, as an ill-directed blow is very likely to produce poll-evil, or knock the sight out of an eye.

It is said that a bottle full of water, broken on the ear of a rearing horse, proves an effectual cure; but happily the danger to the rider during such treatment of his bearer, is a strong guarantee against the frequent adoption of this barbarous practice. In many cases lowering one hand with the rein on that side when the horse is just beginning to rise, will have the effect of

breaking the rear, the horse being urged forward with the spur the instant his fore legs are down ; but if, when he has gained anything like the perpendicular, the rein or head be chucked, or by any misfortune interfered with, the chances are that the brute will walk about on his hind legs like a dancing dog, and most likely finish by falling back on his rider.

A martingal is sometimes found to be a preventive, especially a running one.

Jibbing.—The disposition to this vice is generally called into action, in the first instance, by the fret consequent on the abrasion of the neck by the collar, or by the working of uneven traces (page 57). The use of a saving-collar, and the careful adjustment of the traces, may therefore obviate the propensity.

Sometimes jibbing is the effect of bad handling when starting with a heavy load. Where such a disposition evinces itself, the carriage should be pushed from behind, or another horse placed beside, or, if possible, in front of the jibber, to lead him off.

Shying may proceed from various causes, such as defective sight, nervousness, or tricks ; thus it may be the result of either constitutional infirmity or of vice. From whatever cause proceeding, the proper way to manage a shying horse is, to turn his head *away from* the object at which he shies, in riding, pressing the spur to the same side to which his head is turned ; thus, if the object he dislikes be on the right, turn his head to the left, and press your left leg, giving him that spur, and *vice versâ*, according to the side on which the object to be avoided is found. If you have to deal with a bad shyer, your time being precious, and you only care to get through your present ride with the

least unpleasantness possible, in addition to the above-mentioned means, take him, if necessary, well by the head, the reins in each hand, and saw or job his mouth rather sharply, keeping him in rapid motion till you pass the object.

Operating thus on his mouth *severely*, if necessary, will engage his attention, and cheat him out of his apprehension for the moment. It is bad horsemanship, and dangerous besides, to force a horse's head *towards* an offending object while in motion; but if it is particularly desirable that the animal should become familiarised with anything of which he is shy, let him be brought to a standstill, and coaxed up gradually to it, that he may assure himself of its harmlessness by smelling and feeling it with his nose and lips, if possible. Punishment by whip or spur—what is called "cramming" him up to a thing—is a vile error.

When a horse is found to evince a confirmed objection to passing a particular place, and that he keeps bolting and turning viciously, in spite of all ordinary efforts to prevent it, take him at his own fancy, and keep turning and turning him till he is so tired of that game, that he will only be too glad to go forward past the objectionable spot. A horse's sense of smelling is very acute, and sometimes a dead animal in the ditch or field by the side of the road, though unseen, will cause an abrupt and very unseating sort of a shy, with an ordinarily quiet beast of sensitive olfactory nerves.

SELLING.

If the horse you wish to dispose of be a fancy one, either for beauty, action, or disposition, and a fancy price be required, efforts must be made to obtain the fancy customer to suit, and time and attention must be devoted to that object. But if he be of the ordinary useful class, unless a purchaser be found at once, let the owner, directly he has made up his mind to part with him, think of the best market available, whether public auction, a fair, or private sale by commission.

The public auction, with a good description of the animal's merits, if he has any, is the readiest and least troublesome mode of disposing of all unsuitable property; and from my own experience, I should say that the better plan is to make up one's mind positively to dispose of such the first time it is put up by the auctioneer, having, of course, placed a reasonable and rather low reserve price on it, and provided that the sale be fairly attended by purchasers; otherwise I should not allow my property to be offered until a more favourable opportunity.

A valuable and fancy animal, if his owner is not pressed to sell, had better be disposed of by full advertisement and private sale at his own stable.

CAPRICE.*

All horsemen know how whimsical horses are, and the best riders feel a certain amount of diffidence, and

* A suggestion has been made by one of the ablest reviewers

even awkwardness, on beginning with any new mount, until a more perfect acquaintance is established between man and horse.

A horseman who identifies himself with his steed will sometimes by a mere fluke hit off the means of having his own way with a capricious though perhaps really well-disposed animal, if one only knew the way to manage him.

For instance, a first-class hunter of my own (Baronet), whose excellent performance in the field, where I had seen him tried, induced me to purchase him, soon gave evidence of a peculiarity for which, unknown to me, he had made himself remarkable. No ordinary means could prevail upon him to go through any street of a town except such as he pleased himself, of which he gave me evidence the first day I had occasion to try him in that way, walking on his hind legs directly his will was disputed on the subject, even to the extent of a mere pressure on the rein at the side he was required to turn. In my difficulty instinct prompted me to drop the reins and gently direct his progress with the point of the whip at the side of his nose, and in this way he went ever after as quiet as a sheep with me. Having discovered his caprice, I was always provided with a handle of a whip or a switch of some kind for his benefit. Riding him one day into Dycer's, an old acquaint-

of the first edition of this work, to add a chapter on caprices of horses ; and doubtless such would be so extremely interesting, that the temptation to insert notes under this head in my first edition was only overcome by the determination to avoid being led into anecdote, which has been strictly observed throughout, as being out of keeping with the concise style in which it was intended that the book should be produced. A few practical hints are, however, here classed under the head of "Caprice."

ance of his, well aware of his propensity, exclaimed in terms not complimentary to Baronet at my possession of him, and was much amused when I told him my simple method of managing this self-willed gentleman.

The same sort of what I can scarcely help terming "instinct" that has often taught me, and doubtless hundreds of other practical horsemen, to meet the whims of their steeds so as to suit themselves, produced a victory somewhat similar to the foregoing over an animal that, in the presence of a large assembly interested in his performance, most determinedly refused to *trot*, though ridden successively by the most skilled nags-men Dycer's yard could produce, as well as by Dycer himself.

I proposed to try my hand, and the animal at first start pursued the same uneasy half canter with me; but perceiving that he seemed particularly desirous to take a drink from a trough that happened to be in the way, I allowed his attention to be distracted by taking as much water as he pleased from it; and then turning him in the opposite direction from that in which he had so obstinately persisted in his own gait, patting and doing all I could to reassure him, dropping the bit-rein altogether, and taking a very light and lengthened hold of the snaffle-rein, I let him move off at his own pace, which, to the surprise of every one present (my own, I admit, included), proved to be a walk, which he immediately changed into a jog-trot all up the yard, winning for me a bet of twenty sovereigns to one from the late Edward Dycer, that the horse could not be made to trot within a quarter of an hour of the rider mounting.

Now, it is only caprice that can account for the likes and dislikes of horses about going lead or wheel in

four-in-hand. One horse will not stir till removed from the wheel, and another will be equally unmanageable if assigned the leader's part, while an exchange of places will perhaps render both animals perfectly tractable.

In double harness it may sometimes be observed that an animal, while working by itself, or with others not faster, will casually show great spirit, but when coupled with another possessing more life and action, it will seem at once subdued from its former liveliness, and go along like a slug, quite out of sorts at finding itself outpaced, &c., while its more sprightly neighbour will exhibit a double ebullition of spirits, as if in reproach to say, "Why can't you come on?" To prove such cases of whimsicality further, replace the apparent sluggard by coupling with our vivacious steed a more lively and active animal, and you will see the latter in his turn become subdued and "shut up," in comparison with his previous sprightliness.

Again, although the animal is decidedly gregarious, a horse, from some dislike to its companions or other whim, will absolutely pine and cease to thrive in a stall stabled with others, and be restored to its usual spirits and health on removal to a loose-box. Such animals are generally restless at night, and show great ability in smashing their head-collars.

On the other hand, most horses like company, and will pine away if kept alone.

These things should be studied.

PART II.

DISEASES.

When I had nearly completed this little manual, chance placed in my way a valuable work called the 'Illustrated Horse-Doctor, by Edward Mayhew, M.R.C.V.S., which has borne me out in many of my opinions regarding various diseases, and given me some useful elucidation as to the latest approved treatment of some ailments.

I would strenuously recommend the work for its simplicity and usefulness to country gentlemen and other owners of valuable horses who can afford to purchase it; they would derive great assistance from it, not only as far as regards the written matter, but also from the spirited and very characteristic illustrations, exemplifying more clearly than any description possibly can do, matters connected with the treatment of horses under disease.

As to this little work, any remedy herein advised to be used, without reference to competent authorities, is

practical and may be depended on, though intended to be harmless in any event.

However, every one must be aware that doctors will differ, and some who are critics may have pet theories of their own, which they might here and there prefer to parts of the practice here recommended.

It may be borne in mind, nevertheless, that diseases, like politics, with time and occasion are liable to change their character.

Many diseases are far more easily prevented than cured; and I must, in the very first instance, protest against the unnatural and injurious warmth by heated foul air, so much advocated by grooms, as a means of giving *condition*, to produce which, food, work, and air are the safe and natural agents.

Wherever a means of avoiding any disease herein touched upon has suggested itself, it is prominently set forth, in just appreciation of the golden rule, that "prevention is better than cure."

OPERATIONS.

As all painful operations can now be performed under the influence of chloroform, the least compensation an owner can make to his poor beast for the tortures he is put to, in order to enhance his value and usefulness to his master, is to lay an injunction on the professional attendant to make use of this merciful provision, in cases where severe pain must otherwise be inflicted on the animal.

Rarey's method of casting for operations, or when a horse is so extremely unruly as to require to be

thrown down, may be thus quoted from his own directions :—

"Everything that we want to teach a horse must be commenced in some way to give him an idea of what you want him to do, and then be repeated till he learns perfectly.

"To make a horse lie down, bend his left fore-leg and slip a loop over it, so that he cannot get it down. Then put a surcingle round his body, and fasten one end of a long strap around the other fore-leg, just above the hoof. Place the other end under the surcingle so as to keep the strap in the right direction; take a short hold of it with your right hand; stand on the left side of the horse; grasp the bit in your left hand; pull steadily on the strap with your right; bear against his shoulder till you cause him to move. As soon as he lifts his weight, your pulling will raise the other foot, and he will have to come on his knees.

"Keep the strap tight in your hand, so that he cannot straighten his leg if he rises up. Hold him in this position, and turn his head towards you; bear against his side with your shoulder, not hard, but with a steady equal pressure, and in about ten minutes he will be down. As soon as he lies down he will be completely conquered, and you can handle him at your pleasure.

"Take off the straps and straighten out his legs; rub him lightly about the face and neck with your hand, the way the hair lies; handle all his legs, and after he has lain ten or twenty minutes let him get up again. After resting him a short time make him lie down and get up as before. Repeat the operation three or four times, which will be sufficient for one lesson.

"Give him two lessons a-day; and when you have given him four lessons he will lie down by taking hold of one foot. As soon as he is well broken to lie down in this way, tap him on the opposite leg with a stick when you take hold of his foot, and in a few days he will lie down from the mere motion of the stick."

For the purpose of handling horses more easily *without casting them*, when slight operations have to be performed, a twitch is used, made by 7 or 8 inches of cord formed into a noose, which is attached to about two feet of a strong stick. The noose is placed on the upper lip of the horse, and by turning the stick round and round, it is tightened. The pain thus occasioned to the animal subdues him to bear almost anything, and he can thus be subjected to minor operations while standing, but it is also as well to place a cloth over his eyes to prevent his being too well informed of what is going on,—a precaution which may be used with advantage under various other circumstances, such as measuring the height, when the sight of the size-measure as placed against his shoulder might alarm him—in fact, upon any occasion when it may be desirable that a horse should not be aware of what is passing around him; for instance, if he is unwilling to go on board ship or into a horse-van.

TO GIVE A BALL.

Turn the animal round in the stall so as to have his head to the light, making the least possible fuss or noise.

Stand on a stool on the off side, and, gently putting

your hand in the mouth, draw the tongue a little out; place the fingers of the left hand over it, and keep it firmly in this position by pressure *against the jaw*—not holding the tongue by itself, as a restless horse, by suddenly drawing back or sideways while his tongue is tightly held, may seriously injure himself.

The ball having been oiled to cause it to pass easily, is to be taken between the tips of the fingers of the right hand, and then, making the hand as small as possible, pass the ball up the mouth by the roof to avoid injury from the teeth. Directly the ball is landed well up on the root of the tongue, take away that hand, and as soon as it is out of the mouth, let the left hand release the tongue, which, in the act of being drawn to its proper place, will help the ball down.

An assistant standing at the near side may be useful to hand the ball to the operator, and to *gently* keep the jaws open while the ball is being given.

Have a warm drink ready to give immediately after the ball is taken.

It may be remarked that in racing stables, where such things are generally well done, young and small boys will, quite alone, coolly take spirited, and often vicious animals, and in the most gentle manner administer the ball, unsuspected by the beast himself, who is hardly made aware of the operation he is undergoing.

To give a Drench.—Turn the animal round in his stall as in administering a ball. Use a cow's horn, the wide end having been closed up by a tinman.

Pour in the liquid at the narrow end, the mouth of which should be an inch in diameter.

The operator, standing on the off side, should have

an assistant; both should be tall, or make themselves so by standing on *firm* stools or a form.

The assistant must raise the horse's head till his mouth is above the level of his forehead, and keep it in that elevated position *steadily* while the drench is administered—such position being necessary to facilitate the passage of the liquid down the throat by its own gravity, the tongue not being here an available agent, as with the ball.

The operator, taking the wide end of the horn in his right hand, can steady and assist himself by holding the upper jaw with his left, and, leaving the tongue at liberty, will discharge the drench from the horn *below* the root of the tongue if possible.

A proper drenching-horn should be always kept at hand, and be well cleaned after use.

A glass bottle should never on any account be substituted for the proper instrument.

PURGING.

Whenever an animal accustomed to high feeding and hard work is from any cause laid by, it is most desirable (in pursuance of the golden rule that prevention is better than cure) to take such opportunity to relax the hitherto tightly-strung bow, by administering a mild purge.

The object of this precaution is, that the absorbents, having been accustomed to a perpetual call as the result of perspiration induced by work, are liable, when the beast is left at rest for several days, and this call is thus discontinued, to take on unhealthy action, and

engender diseases, the most fatal of which is that scourge "Farcy."

How many a fine horse, to all appearance in the best condition, have I seen stricken with this fell malady, from no other accountable cause than that which it is hereby proposed to guard against; besides, every one knows that any animal kept at rest and fed up is more predisposed to all kinds of inflammatory attacks, and when thus visited the system more readily succumbs.

More than this, every practical man is aware that an occasional aloetic purge improves the health, condition, and vigour of a horse.

It seems as if the aloes acted as a powerful tonic and renovator as well as purge.

What trainer will think of putting a lusty or ill-conditioned animal into "fettle" without employing this purge as a partial means?

It is very dangerous to give a purging medicine to a horse without first preparing the bowels by relaxing them moderately with bran mashes.

This is best done by giving about three or four sloppy mashes, three in the course of the day preceding the administration of the purge (reducing the quantity of hay to one-third the usual amount), and one the first thing next morning, no water or hay being given beforehand that day; about two or three hours after the mash, administer the purge, giving just before and after it as much warm water as the beast will drink.

No hay should be allowed this day or night, but as many sloppy mashes as will be accepted should be given.

Give two hours' brisk walking exercise in clothes about six or eight hours after the administration of the

purge, and next morning, after a mash and watering (always with warm water), two more hours of the same exercise in clothes; but be careful *not* to sweat the horse.—*See* page 144.

If the evacuations be fully free, less exercise is necessary; otherwise, in a couple of hours repeat the walking at a brisk pace. When the desired effect of the medicine has been satisfactorily produced, hay and corn may be *gradually* resorted to.

While an animal is under the operation of purgative medicine the water and mashes should be warmed, and the body well protected from cold by clothing and the exclusion of draughts.

The ordinary purge, consisting of Barbadoes aloes 4 drachms, extract gentian 2 drachms, is mixed into a mass by any chemist. With some delicate horses, subject to looseness, this purge may be too strong, and should be reduced by a drachm of aloes and half a drachm of gentian.

On the contrary, with large horses of a full habit, 5 drachms of Barbadoes aloes or even more may be necessary, with 2 drachms of gentian. In all cases where there is reason to suppose that the mucous surfaces of the alimentary canal may be in a state of irritation, it is much safer to give linseed-oil, say a pint at a time, to which may be added, if speedy purging be essential, twenty drops of croton oil.

The use of old dry hay will be found the most simple and ready primary resource to stop purging and steady the action of the bowels, and a very little bruised oats may also be given in such cases.

Should the purge appear to gripe, copious clysters of warm water will afford relief.

THE PULSE

is easily found by placing the two forefingers under the middle of the horse's jowl or cheek-bone. The novice can feel about here till he discovers pulsation, and having once made himself acquainted with its seat, he will be the better able to judge of a horse when apparently out of sorts.

Inside the forearm, and in other spots, the pulse is equally superficial, but under the edge of the cheek-bone is the most convenient place to find it, or at the temple.

A horse's pulse in health beats from about 32 to 38 a minute—the smaller the animal the faster the circulation will be.

In brain affections the pulse is slower than natural; it is quickest in inflammation of the serous and fibrous membranes—much slower in the mucous ones.

DISEASES OF THE HEAD AND RESPIRATORY ORGANS.

Glanders.—As there is really no cure for this horrible disease, I will not attempt any dissertation upon it, but, merely referring to the remarks upon nasal gleet, page 106, advise all, *whenever they have the least suspicion about the latter*, to consult a veterinary surgeon immediately.

The only preventive against the disease is to keep and work your horses in a reasonable manner, give them plenty of pure air at all times, and to guard them as carefully as possible from contagion.

Sore Eyes should be treated mildly by stuping with tepid water, and the use of laxatives, as mashes, green food, or a mild purge, according to the severity of the case. Keep in darkness. If the affection is acute, consult a professional veterinary surgeon.

Common Cold and Influenza.—It should be remembered that cold air seldom gives cold, but rather its action upon the exhalent vessels of the skin when they are under the process of sweat, and when the exercise that produced the latter has ceased. The superficial action of a low temperature then proves an astringent, clogging the small exhalent and exuding vessels, and by the derangement of the whole animal system, immediately affects the respiratory organs, producing more or less fever.

When disease is thus contracted, it is self-evident that the best way to meet it is by forcing these small vessels into exudation (or sweat) as rapidly as possible, which may readily be done by exercise and clothing upon the very first suspicion that a chill has been taken, and *before the animal is positively affected.* Once, however, that the debility or feverish symptoms incidental to the disease are manifesting themselves, active but entirely different measures must be resorted to.

The premonitory symptoms of cold, and that scourge of the stud, influenza, are, refusal of corn, staring coat, dull eyes, at first a thin and soon a purulent discharge from one or both nostrils, with more or less cough; pulse wired, sometimes very weak, but if highly inflammatory symptoms be present, thin and rapid.

Under these circumstances, if a professional veterinary surgeon is procurable, the case should be referred to him; but rather than suffer an ordinary farrier to

deal with the beast, I will take the liberty in this, as in other cases, to offer simple remedies that can do no harm, and have in my own experience been beneficial.

Bleeding is admissible only in extreme cases, and under professional advice, at the commencement of an inflammatory attack, in affections of the brain, or serous and fibrous membranes—*not in mucous ones.* In cases, however, of sudden pulmonary congestion, or apoplexy of the lungs, general depletion is indicated. Blood-letting should *never* be had recourse to in *distemper* or *influenza*,* neither should purging be thought of in such cases, as it lowers the system, which, on the contrary, requires all the sustaining power possible.

Give at once, in the most inviting small mash of bran, or in the form of a ball,—

2 drachms of nitre;

giving little or no hay, and nothing but warm mashes of bran or linseed, if they will be taken. If the symptoms are urgent, give in a ball,—

3 drachms of nitre, with
1 drachm of camphor.

Also *well hand-rub*, with a liniment composed of equal parts spirits of turpentine and oil mixed, all under the windpipe, the gullet, within three inches of the ear, by the parotid glands, and inside the jowls. Use the liniment twice the first day if the symptoms are severe, and once each day subsequently—abating its use according to the disappearance of the disease.

The horse should be placed if possible in a loose-box,

* A little work on blood-letting, by Professor Hugh Ferguson of Dublin, is well worthy of consultation on the subject.

and being kept warm with plenty of sheets, hoods, and bandages, the door and window of his stable should be thrown open during a considerable portion of the warmer part of the day, to give him *plenty of fresh pure air.*

The head should be kept as pendant as possible, in order to induce the throwing off of the nasal discharge, which will be further assisted by steaming the nostrils, using a very large nose-bag (if possible of haircloth), half-filled with common yellow deal sawdust, having an ounce of spirits of turpentine well mixed through it ; or better, hot bran mashes, of which the poor beast may be tempted to pick a little when first applied.

Either application must be kept at a high temperature by the frequent addition of hot water.

The nose-bag must be used several times a-day—kept on for twenty minutes at a time, and never suffered to remain on the animal till its contents (which should of course be frequently changed) become cold or offensive.

As recovery progresses, *gradually* resume ordinary feeding—remembering that in this, as in all cases of illness, where the constitution has been debilitated, it has to be carefully rebuilt by food and suitable exercise to fit the animal for work. It should be borne in mind that respiratory diseases appear to be *very contagious,* for which reason, if for no other, the patient on the first outbreak of distemper should be removed away from the rest of the stud to a loose-box, if practicable ; the stall he leaves should be cleansed, and all his utensils kept *rigidly separate.*

White-wash and chloride of lime are useful and simple as disinfectants.

This disease is more easily prevented than cured, and horse-owners do well to avoid leaving an animal when heated, or after exercise, standing unclothed in the cold or in a chilly draught. Also be careful about transferring a horse suddenly from total exposure at grass, or from a healthy airy stable to an ill-ventilated and crowded one.

Though influenza or distemper are often considered to be epidemic, contagion should be, as before observed, most carefully guarded against. Some professional men hold these two designations to represent distinct diseases. In influenza the animal becomes speedily attenuated, and the whole system appears disordered and debilitated, occasionally with lameness, as if from fever of the feet.

There is generally one mark which may be permitted to be peculiar as distinguishing some forms of influenza, particularly in certain seasons during its prevalence, which is that of the mucous surfaces assuming a yellow colour all over the body, and the white of the eye being also tinged with that hue.

When influenza assumes a serious character, the professional man must be left to deal with it; but pending the arrival of such assistance, the treatment here recommended can do no harm, the primary seat of the disease being that of the respiratory organ.

Laryngitis, Bronchitis, Pleurisy.—I will not attempt to enter into descriptions or prescribe separate modes of treatment for these and other diseases of the respiratory organs, such delicate distinctions belonging exclusively to the professional man; but while awaiting his advice, the treatment recommended for common cold and influenza can do no harm in any attacks of the

upper air-passages ; and when the lungs or cavity of the chest appear to be affected, that advised as follows for inflammation of the lungs is equally harmless.

Inflammation of the Lungs or *Pneumonia* is indicated by great prostration and high fever, heaving of the flanks (an evidence of great internal anguish); the legs are spread out to their fullest extent, as if to prop up the body and prevent it from falling ; the breathing is difficult, and respiration quick ; extremities cold ; a look of pain and wretchedness marks the countenance.*

Such symptoms can be safely treated by a professional man only ; but if his services cannot possibly be procured, rub in a powerful mustard poultice over the lungs, the seat of which I cannot better describe to the uninitiated than as situated beneath that portion of a horse's surface which would be covered by a saddle if placed on his belly directly underneath the situation it would have occupied on his back, the pommel being close to the fore legs, omitting to blister the portion of the belly which would be covered by the cantel of the saddle when reversed, but continuing the blister between the fore legs to the front of the chest.

The hair need not be clipped off before the application of this poultice. Give every six hours till the arrival of the veterinary surgeon from 30 to 40 grains of ordinary grey powder mixed and administered in the form of a ball.†

* The difference between this disease and attacks of the lower viscera is, that the animal does not kick about, but generally stands as if hopeless and helpless.

† Practical men will tell you that the readiest and best way to mix grey powder, as water will not make it adhere, is with saliva in the palm of the hand, from whence it is transferred by a blunt knife to the horse's tongue near the root, the tongue being drawn

Let the animal have an *additional quantity* of the purest air, with an increased supply of clothing, and in cold weather the temperature should be slightly moderated.

His strength must be kept up after the first day or two by drenches of gruel, till mashes will be accepted.

Nasal Gleet may possibly be occasioned by protracted irritation of diseased molar teeth; but if persistent, especially of a thin, ichorous, glairy, or size-like character, the glands under the jaw being swollen and tender, the Schneiderian membrane or mucous lining of the nose having a dull, pale, or leaden hue, it should be looked on with suspicion, particularly if confined to one nostril, and more so if the discharge adhere round the rim of it.

In such cases consult a veterinary surgeon without a moment's delay, and be careful to prevent any part of your own body, or that of any other person, coming in contact with such a discharge. It is very probably incipient glanders of the most insidious and dangerous character.

To more clearly distinguish the dangerous from the harmless gleet, it may be remarked that when the discharge is thick and purulent, yellow, and in full flow, and without a disposition to adhere to the nostril, though the most alarming in appearance, it is least to be apprehended, proceeding naturally from a heavy cold in the head, which, however, should of course meet with immediate attention.—(*See* "Cold, Influenza," page 101.) For the prevention of nasal gleet,

out for the purpose. I can vouch for the efficacy of this not very elegant proceeding where expedition is an object, having witnessed it myself.

observe the same precautions as those recommended against cold, &c. (page 100), and keep your horses as much as possible to themselves.

In travelling, horses run great risks, and, of course, such diseases are less likely to be contracted in first-class hostelries than in inferior and hack stabling.

Poll-Evil is generally occasioned by a bruise on the head, behind the ears, near the neck, by pressure of the head-stall, &c. (*see* "Haltering," page 17), when, if great care be not exercised to cure the sore promptly, sinuses or cavities will form, eating away into the more important parts of the adjacent structure. Here also, unless an immediate cure be effected by the means directed for the treatment of sores (*see* "Water-dressing," page 149, and "Zinc Lotion," page 147), accompanied with the removal of the head-stall or any aggravating pressure, the veterinary surgeon ought to be consulted at once.

Avoiding the causes will be the best preventive of this disease.

Shivering Fits in general precede or are the commencement of a feverish attack, therefore, in such cases, no heating food must be allowed. Substitute hot mashes, increase the clothing, and administer a febrifuge, as nitre, 2 drachms, repeated in two hours.

Shivers in the stable, proceeding from nervous sensibility, are frequently the result of recent excitement, caused by a band, an organ, or other unusual noise, or even by the sudden entrance of the beast's own attendant, the bounding of a cat, &c.

Strangles generally attacks young horses about the age of maturity, or when first stabled. Debility gradually possesses them; the throat, and particularly the parotid glands under the ears, are sore and swelled,

tending to distinguish this disease from ordinary cold and influenza; a discharge from the nose is also present. The sooner the suppurative process can be induced in the throat the better.

For this purpose rub in turpentine and oil (one part turpentine to two parts oil) once or twice a-day, which, when the skin becomes tender, must be carefully done with a sponge.

When the suppuration is ripe, a professional man should let it out with a knife, and recovery speedily ensues.

As great debility is attendant on this disease, the system should be kept up by bruised and scalded corn, and the appetite tempted in every way by green meats, minced carrots, &c., if requisite. Plenty of air is also essential.

It ought to be superfluous to remark that under such circumstances neither bleeding, purging, nor reducing means of any kind should be adopted, the bowels being merely kept open by bran and occasional linseed mashes, which will assist the mucous surfaces. The chill to be taken off the drink.

Soreness of the Throat frequently accompanies distemper or cold, and is indicated by want of appetite, constant endeavour to swallow the saliva, *difficulty in imbibing liquids*, which, instead of going down the throat, appear to be returned through the nostrils, noisy gulping, &c.

Rub the throat at once with a mixture of equal parts turpentine and oil, and keep up the irritation on the skin.

Administer 2 drachms of nitre once or twice the first twenty-four hours, the animal being, of course, laid by

from all work, and placed in a loose-box; let him be fed on bran and linseed mashes, and given green food, carrots, and anything that will tempt his appetite.

Avoid purging, bleeding, or anything that will lower the system—a rule to be most particularly observed in all diseases of the respiratory organs, unless severe inflammation be present, when a professional man only can judge to what extent the lowering process may be necessary.

Broken Wind is caused by a large number of the air-cells of the lungs becoming fused, as it were, into one large air-cell, thus diminishing the aërating surface, and rendering the lungs weaker. It is indicated by a sudden inspiration and a long, almost double, expiration; the flanks and abdomen are observed to suddenly fall down, instead of being gradually expanded.

Broken wind is, in fact, emphysema of the lung, and there is said to be no absolute cure for it; but it may be alleviated by restricting the animal in hay and water, and giving the latter only in small quantities, not more than half-a-pint at a time, and moistening all food.

Take care he does not eat his bed, which he will make every effort to do. He should have no straw about him in the day, and be muzzled at night.

Lampas does not belong properly to these diseases, indicating some derangement in the alimentary canal, but is here mentioned to guard against a brutal practice commonly resorted to by farriers as a cure for the disorder.

The groom complains that his charge is "off his feed," and fancies that the palate is swollen more than usual—the fact being that he never examined it at any other time; and the farrier proceeds to cure the rejection of food by searing the poor beast's mouth with a

red-hot iron, or scarifying it with a knife. The reasonable treatment of an ailment proceeding from heat or disorder of the stomach will be to withhold all heating food, at all events to a great extent, giving occasional mashes, also tonics and alteratives, the latter to those of full habit, the former in cases of evident debility.

DISEASES OF THE DIGESTIVE AND URINARY ORGANS.

Diarrhœa and *Dysentery.*—The first (diarrhœa, or mere looseness) is, in the horse, seldom more than a temporary debility. In many cases it is an effort of nature to relieve herself, and will probably effect its own cure.

The symptoms require no definition, except that it may be remarked that they are almost invariably unaccompanied by pain or any other inconvenience. Rest, and the use of more astringent food, and leaving a piece of chalk in the manger (which, with horses subject to diarrhœa, should never be absent), will in all probability arrest the attack, which may, to a certain extent, proceed from a predisposition to acidity.

Animals disposed to this disease should be fed on a drier description of food.

Dysentery is, on the contrary, a highly dangerous illness, accompanied with pain.

It mostly commences with excessive purgation, the evacuations being mere foul water in appearance, and stinking. The beast will drink greedily; the pulse is weak; great anguish of body perceptible, the perspiration breaking out in patches.

On the first appearance of such dangerous symptoms,

procure the assistance of a professional man; but in the interval the following drench may be given :—

Laudanum, 1 oz.
Powdered chalk, ½ oz. } Mix.

or,

Catechu, powdered, 1 drachm.
Chalk, ½ oz. } Mix.

or,

Sulphuric ether and laudanum, of each one ounce.

Also injections of cold linseed tea. The dose may be repeated in three or four hours, if medical assistance does not arrive. As great care is necessary in the diet, as well as general treatment, after partial recovery, everything should be done under professional advice.

An attack of dysentery is very likely to be caused by the existence of some acrid matter in the intestines, or by an overdose, or too constant use, of aloes.

As with diarrhœa, horses predisposed to dysentery ought always to have a lump of chalk in the manger, and constant or overdoses of aloes should be avoided.

COLIC AND GRIPES.

As these diseases are sudden, and require prompt treatment, it is well to have some idea of the kind of remedy to be employed pending the arrival of the veterinary surgeon. Some animals are peculiarly subject to them, from a susceptible state of the alimentary canal. Cold water, taken on an empty stomach, or when a beast is heated, will cause the malady.

The symptoms are distress, evinced by pawing, lifting of the fore and hind feet towards the stomach, the head being turned towards the sides, with a look of

anguish ; a cold sweat will sometimes bedew the body. A desire to lie down may be exhibited, and when on the ground the animal rolls about in evident agony. The upper lip is strained upwards from the teeth, almost closing the nostrils, and the pulse indicates derangement of the system.

When the true character of the ailment has been ascertained, it is well to inquire as to the character of the evacuations. If they are in a lax state, and a cause for the same can be discovered, of course discontinue it, and use astringent clysters for the bowels (page 148). If there be reason to apprehend that some offending matter is retained in the alimentary canal, use emollient laxatives and clysters (pages 147 and 148). But if anything like costiveness is present, and other remedies fail, recourse must be had to that of "back-raking," a process which need not be here explained, being well known to every experienced groom, any one of whom may safely be intrusted with the operation, the only necessary precaution being to have rather a small hand used, and that *well* lubricated with lard or oil. Let all the fæcal matter that can be reached be carefully extracted. Afterwards a warm enema, composed of one pint of turpentine mixed in two quarts of hot soap-suds, and a soothing drench of

1 oz. sulphuric ether,
1 oz. laudanum,
1 pint oil,

will be found efficacious.

In the early stages, "gripes," as they are called, may be cured by simply "back-raking," followed by a drench of a bottle of ale, warmed and mixed with one ounce of powdered ginger, and a brisk trot in heavy clothing.

Under highly inflammatory symptoms, the professional man attending will probably bleed.

To guard against colic, avoid giving cold water when the beast is heated, or on a fasting stomach. With horses subject to gripes the water should always be given with the chill off, if possible, or just previous to a good grooming or other gentle exercise tending to circulate internal warmth. Never allow any animal the opportunity of gorging himself with any kind of food after the stomach has been weakened by extra severe work and long fasting.

For costiveness only, give soft bran or linseed mashes, or green feeding; and see treatment for excessive or painful costiveness, page 112.

DIABETES,

or profuse staling, is unfortunately a common disease, and is generally attributed to something wrong in the water, but bad provender may occasion it.

Thirst is generally very great.

Give catechu, 2 drachms at a time, two or three times daily, in mashes.

Change the food or water, whichever on examination seems most objectionable. Give no hay or grass, but plenty of linseed tea to drink; give *good* bruised or scalded oats, with a small quantity of warm bran mixed in each feed, and leave a lump of chalk in manger: or administer diluted phosphoric acid, one ounce to one pint lukewarm water, twice daily, till the symptoms abate, then gradually reduce the dose.*

* This will be found almost a specific; it is recommended by Mr

A horse once found to be subject to this disease should be very carefully fed and watered.

WORMS

are indicated by a state of the coat called "hide-bound" and "staring," with loss of condition, and indisposition to work; by a slimy mucus covering the dung balls; also occasionally by the adherence of the parasites round the anus, and thin evacuation in the fæces.

They cling so pertinaciously to the internals, that they will eat through the coat of the stomach, and are never likely to be removed by a single dose of any medicine. Spirit of turpentine is highly recommended as a cure, but if given it must be diluted largely—one part turpentine to four parts oil.

Practical experience of various remedies for worms justifies me in recommending one grain of arsenic and twenty grains of kamela twice daily (each dose mixed in a handful of wet bran, and given with oats or other feeding) for eighteen days, and a purge the nineteenth morning.

The horse may get *moderate* work during the administration of the *powders*.

Common salt is also considered a good remedy: about a tablespoonful daily mixed with the food.

To guard against these pests, avoid the use of Egyptian beans; but as "bots" are mostly taken in at grass

Mayhew, and is said to have originated with Mr Woodyer, V.S., at Paddington. Professor Dick is also reputed to be very successful in the treatment of this disease, by the use of small and repeated doses of iodine or iodide of potassium.

by the animal licking off and swallowing their larva laid in the hair of the legs, it is almost impossible to exclude them. In a few cases they are bred in the internals without any accountable cause, and against this no precaution can avail.

Liver Diseases, or the farriers' "Yellows," so called from the fact that such cases are marked by the eyelids, linings of the nose, and lips when turned up, being found to be tinged more or less with yellow.

Here mercury must be administered, and aided by subsequent purging, as is necessary with the human subject.

Thus, give half a drachm to a drachm of calomel mixed in a little flour, and put in a mash of bran one evening, and next morning follow it up with the aloes purge-ball (page 99).

If the "yellows" be very marked, with other derangement of the system, give for two days one drachm of calomel daily in doses of half a drachm each, mixed in mashes as described above; and after two drachms have been taken in this way, administer on the third morning the aloetic purge.

Inflammation of the Kidneys and Bladder.—With regard to internal inflammation arising from various causes, the symptoms of distress bear a general resemblance to each other: legs spread out, extremities cold, breathing accelerated, and a look of pain pervading the animal's whole appearance, except that in diseases of the urinary organs there is generally a straddling gait, and on observance of the genitals some marked action in this region on the part of the beast will be discovered.

Such attacks can only be properly treated by a professional man, therefore lose no time in procuring his

services; but, in the meanwhile, I shall observe that inflammation of the kidneys is, sad to say, too common to admit of its being passed by without offering some caution and advice regarding it, more for the purpose of prevention than cure.

Disease of the kidneys is generally brought on by the *misuse* by grooms of their favourite diuretics; a dose of nitre "to fine his legs," or "bloom his coat," or for any other purpose, to save themselves trouble, is the groom's specific for the poor beasts under their care; but so injurious are diuretics that masters ought to make their secret administration, as commonly practised by the class referred to, a case of instant dismissal.

The kidneys of the horse are peculiarly susceptible of action; so much so that purges frequently, in place of acting as intended, will take effect on them.

It should besides be borne in mind that while the kidneys are in artificial action, and secreting an extra quantity of urine which is being passed away, the creature should have the same opportunity of rest, and as much consideration given him, as if he were in a state of purgation. The secretion is blood in its changed form, and is a serious call on the system. All this does not enter into the head of an ignorant groom, who, on the contrary, will work or treat the poor suffering creature as if he was in his best vigour.

Inflammation of the kidneys is marked by an appearance of general distress—hind legs straddled, the backbone hogged, urine small in quantity, tenderness over the loins when pressed.

If a practitioner be not procurable, immediately place warm mustard poultices over the loins, and cover them with sheep-skins.

Give half a drachm extract of belladonna with half an ounce laudanum in a pint of linseed tea every four hours, and inject constantly with warm linseed tea.

Inflammation of the Bladder presents very similar symptoms to that of the kidneys, only that the bladder being farther away from the backbone, instead of the latter being hogged, it is rather depressed. In this case, as in inflammation of the kidneys, call in the veterinary surgeon; meanwhile give the drink recommended for the kidneys, and though the surgeon's decision is desirable with regard to mustard blistering, the use of this counter-irritant should not be too long delayed; therefore, in the event of his non-arrival within an hour or so, apply mustard blister to the stomach far back (between the flanks), as being nearest the seat of this disease.

DISEASES OF THE FEET AND LEGS.

Once more the old proverb that "prevention is better than cure" deserves to be dwelt upon, for very many diseases under this head can be prevented, and very few can ever be cured.

Generally speaking, the fore feet and hocks of a horse are the most susceptible of disease induced by wear and tear—the fore feet, because the greater part of the weight of the animal is borne upon them, and the hocks behind, because they are the propelling power.

It is remarkable in cases of lameness, that when the disease is seated in the feet, the lameness becomes temporarily aggravated on work, whereas if it proceed

from disease in the legs, it becomes apparently less after the limbs have been worked a while. With regard to animals keeping their condition while labouring under lameness, experience has taught me that horses lame in the fore feet will, if able to work at all, continue to do so without apparently losing condition from the fret of lameness; but when the hind legs are the seat of disease, the condition evaporates very rapidly. This, I imagine, is because an animal lame in the fore feet will lie down and take more rest than when sound; whereas if lame behind, he will not take sufficient rest, as rising and lying down cause him pain; hence he continually stands, and, of course, aggravates the disease.

The foot is thus sectionised and described by Delawere P. Blaine, Esq.:—

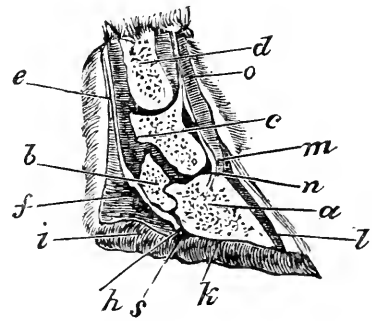

Fig. 2.—Section of Foot.

"On examining a perpendicular section of the foot and pasterns, there appear the coffin-bone (*a*), the navicular or nut bone (*b*), the coronary or little pastern bone (*c*), the large pastern bone (*d*), the back sinew or great flexor tendon of the foot (*e*), the same tendon

sliding over the navicular bone (*f*), its termination or insertion into the bottom of the coffin-bone (*s*), the elastic matter of the sensible frog (*h*), the insensible or horny frog (*i*), the horny sole (*k*), which includes the parts of the sensible foot; the outer wall of the hoof (*l*), the elastic processes (*m*), the attachment of the extensor tendon to the coffin-bone (*n*), and its attachment to the coronary bone (*o*), which completes the section.

"The coffin-bone (*a*) adapts itself to the figure of the hoof, or rather is adapted by nature to this eligible form. The eminence in its front receives the insertion of the tendon of the great extensor muscle of the foot. This important muscle has its upper attachment to the humerus or arm-bone, where it is principally fleshy; but as it passes downwards it becomes tendinous, expanding over every joint, both to prevent friction, and to embrace and give firm attachment to each bone with its opposed bone, by which a firm connection of the various parts is maintained, and a simultaneous movement of the whole limb is effected. In the hinder limb this extensor tendon and its two less or tendinous adjuncts arise from the tibia, and in part from the femur, but in their origin are fleshy.

"In the sides of the coffin-bone are attached lateral cartilages, and around its surface are marks of the attachment of the laminated substance.

"The coronary, or small pastern bone (*c*), is seen to rest on the coffin-bone (*a*), with which it articulates by its lower end; its posterior part also may be seen to be closely articulated both with the coffin and with the navicular or nut bones (*f*), whose attachments to them are effected by ligaments of great power and some

elasticity. Nor is it possible to view this horny box and its contents without being struck with the admirable display of mechanism and contrivance which meets our eye. We are apt to say, 'as strong as a horse,' and some of us use horses as though they were made of imperishable stuff; but surely, when we well consider the subject, we shall see both the necessity and the morality of using them with discretion."

This description of the structure of the foot will probably better enable the uninitiated to understand the seat and nature of various ailments of that part of the horse which are here touched upon.

Blaine further describes the construction of the hoof thus :—

"The hoof itself is conical, or rather, as Clark observes, slightly truncated, and is a secretion as well from the vascular parts of the foot as from the skin, as our nails are formed from the portion of skin called quick. The structure of the hoof is firm and fibrous. Externally it is plane and convex, but internally concave and laminated. The quarters are the lateral parts. As the horn approaches the heels it becomes soft and is reflected inwards. The heels are parted by the horny

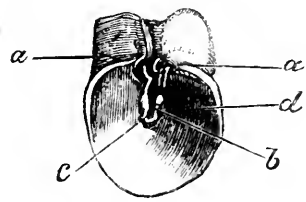

Fig. 3.

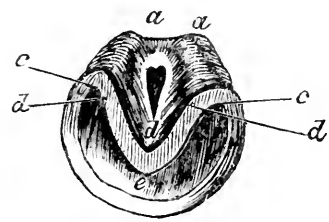

Fig. 4.

frog (*b*, fig. 3); and without, the frog on each side the hoof inflects its fibres to form the bars which are seen

on the under surface (*c*, fig. 4). In a healthy foot, fig. 4, the heels are round, wide, and smooth (*a*, *a*), the frog fully expanded, the bars or binders distinct (*c*, *c*), no corns in the usual angle (*d*), the sole broad and concave (*d*). In a diseased foot, fig. 3, the heels are high, and drawn together by contraction (*a*, *a*), the frog narrow, and filled with fissures from contraction and thrush (*b*), corn frequently present (*d*), the sole greatly shortened in its transverse diameter, which is morbidly counterbalanced by the increased heights in the truncated form (*c*). When the hoof is removed, the sensible or fleshy sole (*h*, section of foot), above which it immediately lies, presents itself, covering the whole of the horny sole, except so much as is taken up by the sensible frog (*h*). This part is exquisitely sensible and vascular, and thus we learn why injuries to it from puncture produce such serious effect, and why very slight pressure from contraction of the hoof gives so much pain. The sensible frog and the sensible sole form the insensible frog and sole; but when from pressure, too much moisture, or other causes, the sensible frog, instead of forming horn, secretes pus or matter as in thrush, the structure of the whole becomes injured, and the frog thus losing its support gradually wastes and decays. It is therefore evident that no thrush can be entirely harmless, as is erroneously supposed.

"Above the sensible frog is the great flexor tendon, or back sinew, inserting itself into the vaulted arch of the coffin (*a*, section of foot). This important tendon, arising from its parent muscle above the knee, whose origin is taken from the humerus and ulna, in its passage unites with an assistant flexor, but which latter is principally distributed to the pastern bones, while the

perforans, so called because it is perforated by the assistant flexor tendon, is inserted into *the vault* of the coffin ; in the posterior extremities the attachments of these two leading flexors and a smaller *lateral* one are from the femur and tibia.

" *The Sensible Laminæ.*—Around the surface of the coffin-bone, it has been noticed that there are linear indentations to which about five hundred fibro-cartilaginous leaves are attached. Each of these is received between two of the horny lamellæ, which line the interior of the horny hoof ; and when it is considered what a vast surface of attachment is formed by these means, the strength of the union will not be wondered at. No common violence can separate these parts, and their use as a spring (for they are extensile) to support the action of an animal at once weighty, strong, and extremely agile, must be apparent.

" The vessels and nerves of the foot are derived from the metacarpal arteries, veins, and nerves, which pass behind the pastern, when the main trunks divide to proceed to each side of the foot, and are ramified from thence throughout. It is a division of the metacarpal nerve on each side of the lesser pastern, or on each side of the larger, as occasion suits, which forms the nerve operation now in vogue as a remedy (?) for navicular disease."

Laminitis, or *Fever of the Feet*, although generally the result of too long a journey, or any exercise where excessive and continuous concussion has been occasioned to the feet, frequently arises from other causes. It is often what is termed secondary, as one of the sequelæ of inflammatory diseases of a more constitutional character.—(*See* " Metastasis," page 144.) The laminæ

are plates (technically, semi-cartilaginous leaves received between the horny lamellæ which line the interior of the hoof) resting on the inside of the horny hoof, and giving an elastic support, whereby the whole weight of the horse's structure is thrown against the wall of the hoof and kept off the side. It is not surprising, therefore, that these causes should produce derangement here.

As laminitis generally attacks the fore feet, the poor beast in his anguish endeavours to throw his weight off them by resting on his hind quarters, which are tucked under him, with the fore legs and feet pushed out before him merely to keep him from falling; he can barely hobble if he attempts to move. If the fever be only slight and in one foot, he will point it, while extreme lameness and unnatural heat in the foot mark the disease. The shoe should (in this as in all cases of foot-lameness) be instantly removed by a smith brought to the stable instead of giving the poor creature the pain of limping to the forge.

The foot should be put into cold water, constantly renewed, and kept in it all day; at night a bran poultice or water-dressing should be left on (*see* "Water-dressing" and "Poultices," page 149). Also administer a purge.

In acute cases, bleeding at the toe is sometimes practised by paring away there till the veins appear. This is a very questionable remedy, and there is little doubt that the use of the knife only aggravates the inflammation.

The fact is, that beyond its incipient stage, none but the veterinary surgeon is competent to deal with this disease.

Its prevention is best secured by requiring moderate

work only, and at the proper road paces—viz., walking and trotting—keeping the feet moist, wetting them occasionally during a long journey, and *regularly stopping them directly after each day's severe work.*—*See* "Grooming," page 13.

Navicular Disease is, unfortunately, a very common one with horses; and when the delicate structure of the foot is considered in connection with the rough usage the creature gets on hard roads while carrying a heavy weight on his back, it is only surprising that the feet bear such jarring at all.

The navicular is the small pulley-bone, over which the flexor tendon passes, and being the most active of any of the foot bones, is the most likely to be injured by ill usage (*see* page 118). The symptoms are lameness, with more or less pointing of the foot when at rest, and heat towards the quarters of the lame foot.

Unlike laminitis, the lameness is inconsiderable at first, and increases as the disease progresses.

Being so deep-seated, it is very difficult to cure. In the incipient stages the most effectual remedy appears to be the insertion of frog-setons, requiring the assistance of a veterinary surgeon. In most instances the case is hopeless, and many a fine horse is sold to limp out a life of misery, drawing a hack cab, or, with a refinement of cruelty, is subject to the operation of unnerving the foot, which, by destroying sensation in that part, enables the animal to travel without apparent lameness, though the disease continues to progress till part of the foot has been known to drop off in work. Being a result of work to which all horses are liable, no mode of prevention can be recommended.

Lateral Cartilages.—Another ailment of the foot is more common than is generally supposed, called "Disease of the Lateral Cartilages." It requires the skill of an anatomist to decide upon its presence. In fact, this and navicular disease are both very obscure in their origin and diagnostics, and a surgeon only can properly deal with them, as well as with all other diseases that are not very distinctly marked, and in their early stages not important.

Thrush.—A disease of the frog: the cleft becomes eaten away, and a foul matter is secreted. It more frequently attacks the hind than the fore feet.

By some it is said to be constitutional, but it is much more probably the result of neglect of the foot in the stable, the hind feet being oftener affected, from the fact of the urine and fæces coming more immediately under their tread.

At every shoeing or removing, the frog should be perfectly cleared of all defective parts by the knife, and where the disease has once manifested itself the cleft should be kept continually stopped with tar and tow. A return to a healthy state is likely to be tedious, therefore continued attention to these directions is necessary. If a severe case, use a bar-shoe, to avoid the wear and tear of the road, and which will also help to keep the pledgets of tar and tow in their place. To prevent thrush, let the litter and bedding be completely removed from the horse every morning till bedtime at night; let the pavement be kept scrupulously clean through the day; attend and wash the feet, examine them frequently, and upon the slightest sign of the disease use the remedial means.

Quittor.—This is a disease of the feet wherein, either

from delicacy of or accident to the sole, the sensible part becomes affected. A suppurative sinus is formed, eating away till it often comes out at the coronet. Once it reaches this, the animal, unless of great value, might as well be destroyed, the restorative process being of a most tedious and expensive character, requiring continual manipulation by a surgeon.

By careful shoeing (where nails are not driven out of their proper direction) and a most exact examination of the foot where any extraneous matter, such as glass, gravel, &c., is suspected of having entered or damaged it, quittor will most probably be avoided.

Canker seldom attacks gentlemen's horses, or well-bred ones. It is literally a change of a portion of the foot into a kind of fungus, sometimes commencing in the sole, sometimes in the frogs, and is aggravated by foul litter, bad stabling, and general bad care.

As no dressing or external application will restore the foot without manipulation, a surgeon only can deal with it.

Cracked and Greasy Heels.—Animals of languid circulation in the extremities are more susceptible of such diseases, which are induced and aggravated by lazy ignorant grooms pursuing their objectionable practice of wetting the legs, and leaving them to dry themselves.—*See* page 13.

Symptoms are tumefaction and soreness of the hinder part of the pasterns, even to fissures emitting matter.

Clip away the hair in the first instance, so as to be able to cleanse the sore by washing it with warm water and soft soap, drying it perfectly. Then apply glycerine lotion (page 147).

If the sore seems likely to incapacitate the animal

from work, administer a mild aloetic purge (page 99). Very serious consequences may result from the indolence of grooms in neglecting this ailment. In acute cases, the sore, eating into the tendon, produces mortification and death. I have myself lost a valuable animal from this disease, through the gross neglect of my grooms in my absence.

Except in the very earliest stages and in palpably trifling cases, a veterinary surgeon should be consulted, especially in what is called "grease," or matter running from these cracks. The preventive means are, never to allow water to your horses' legs above the coronet on any pretence whatever, and if by accident or work they get wet, to have them rubbed dry as promptly as possible.

Shelly Hoofs (or splitting open of the external part of the horny hoof).—The feet of some horses are more subject to this disease than those of others, from the fibrous structure being more dry with them.

This fibrous structure forming the hoof is found, on microscopic examination, to resemble a lot of hairs all glued together into a hardened mass, and where the adhesive matter is of a drier character than usual, the hoofs are more brittle. With some horses this results in "shelly hoofs;" they don't split, but are perpetually breaking away. With this description of hoofs, tar is the best possible application. Neither grease nor oil should ever be used—these only aggravate the disease, as on close observation they will be found to act as powerful astringents, excluding the healthy action of air and moisture upon the part most in need of them. Strange to say, tar, from its pungent properties, induces healthy action in the part, and is peculiarly adapted

to promote the growth of the fibrous structure as well as lubricating it.

Sand-Cracks seldom go diagonally, but are either horizontal or vertical. I shall endeavour to exemplify the simple principle of this disease with a simple principle of remedy, dealing with it like a split in a board on which I desired to put an effectual stopper. In such a case I should carefully gouge out a small hole at each end of the split, beyond which hole the fissure would be certain not to pass. With the hoof the same principle can be carried out by filing an indentation directly across each end of the crack, only taking care not to file deeper than the insensible part of the hoof; or the end will be answered by using a red-hot firing-iron instead of a file, taking the same precaution not to touch the sensible part. I should also weaken along the edges of the crack itself by rasping them down. Over the crack, if deep, should be strapped a thin pad of tow and tar, to induce reproduction and prevent foreign substances from entering the fissure.

Unless by the grossest neglect, no sand-crack will have been allowed to go beyond the reach of the foregoing treatment, but in some cases the effect of negligence and ignorance is seen in the horizontal crack running almost round the foot. In such cases it will generally be found that with a flat foot (inclined to greater malformation) the toes have been suffered to extend, shoeing after shoeing, by the smith allowing a great accumulation of wall over the toe, until the centre has become weakened into a fissure. Such a state of things seldom or never occurs in a gentleman's stable, but is to be met with among farm horses or those accustomed to heavy draught.

The careful strapping up with tar and tow, which must be constantly attended to, rest, and the indentation process, will, with *time* and *care*, effect a cure.

Sand-crack, especially the vertical, is more dangerous and tedious the nearer it is to the coronet. This once divided, the case becomes serious, the coronet being very vascular, and a split here requires a great deal of care to induce it to take on union. Unless the closing commences at the coronet, and continues as the hoof grows *down*, it will never close *at all;* in fact, if the coronet be divided it is fortunate if the crack does not go the whole way down to the shoe. If it does not, the lower end should be weakened by filing an indentation at its lower extremity, weakening the sides of the crack by rasping them, and keeping the hoof strapped round with dressings of tar and tow, also (a most *important* part of the treatment) paring away the wall of the foot (above the shoe and immediately under the crack) an inch—that is, half an inch on each side of it—making as large a vacuum as can with safety to the sensible parts of the foot be pared away, directly under the crack and over the shoe; the object of this being that all parts of the wall except that under the crack shall press on the shoe. It is obvious that by the foregoing means every movement of the horse, in place of aggravation, will tend towards alleviation of the disease, by pressing the weakened sides of the fissure together. For the foregoing reasons, in the case of a vertical crack the shoes had better remain on, while in the worst cases of the horizontal crack, as its weight round the bottom tends to weaken the centre of the hoof where the crack is likely to be situated, it had better be removed (or light tips worn), its absence also enabling the wall of

the hoof under the crack to be rasped as thin as possible. In vertical cracks the use of a bar-shoe will tend to keep the foot together (page 80).

Corns are occasioned by the inflexible shoe pressing on that part of the sole, or possibly from friction of the bones upon its internal surface. They present the appearance of a red effused bruise, almost invariably situated on the heel of the sole of the inside quarter of the fore feet.—(*See* illustration, fig. 3, page 120.)

When neglected, they occasion severe lameness, and go on to suppuration.

Broken knees are also frequently the result of neglected corns.

A horse that is habitually properly shod, is never likely to have a corn. It arises entirely from want of attention and judgment in the smith. The groom, who should always stand by when a horse is shoeing, ought to be instructed to see that the farrier with his drawing-knife invariably pares out the sole at the seat of corn; it can be no injury whatever to the foot when properly done, and is the best preventive of corns. Also take proper care that the shoes are so put on that they cannot by possibility press upon the sole.

For prevention, keep the seat of corn well pared away, and dress with tar, unless in the suppurating state, when it requires poultices (page 149), and the ordinary treatment for that state, and full rest.

Over-reach or *Tread* proceeds from the shoe of one foot coming in contact with the soft or sensible part above the hoof of the other. As the parts likely to be affected round the coronet are full of vessels, the simplest remedial means are the safest—viz., water-dressing (page 149) in the first instance, and afterwards

chloride of zinc lotion (one grain to the ounce of water), or glycerine.

Broken Knees.—Most travellers on the road know what style of thing this is, so it is needless to describe it.

In bad cases, where the bones are exposed, and there is any appearance of synovia or joint-oil, place the horse in the nearest convenient stable, and leave him there to be attended to by a professional man as soon as possible. When the abrasion is merely superficial, take the animal quietly to his stable, if near.

In any event, wash the wound with warm water, which, if it be at all deep, should be done by squeezing the water *above* the wound, and allowing it to run down, as this part of the leg is very delicate and sensitive, and rough handling with a cloth or sponge should be avoided.

Afterwards apply a lotion of chloride of zinc, one grain to the ounce of water.

Tie the beast's head up in such a way as that he cannot possibly lie down, until the healing process has assumed sufficient health to render it safe to allow of the knee being used in lying down and getting up.

Give one or two mild purges, according to the time he is laid up and the healthiness of the wound. To promote the growth of hair, use, when the knee is perfectly healed, hog's lard mixed with very finely powdered burnt leather to colour it; it is as good and safe a thing as can be employed for the purpose. Otherwise use *weak* mercurial ointment. For prevention, avoid the use of bearing-reins in harness; in shafts, keep the weight off your horse's back; keep out of the way of ruts and stones upon the road, and be very careful of

your beast when the work you are giving him is calculated to make him leg-weary.

In riding, teach your bearer to depend on himself, *not* on you: at the same time, don't leave him to himself altogether. Go gently round sharp turns, and don't ride fast down-hill on the road, though on the turf or in harness the pace may be accelerated with impunity. Avoid inflicting sudden, injudicious, and undeserved chastisement; restrain starts or alarms; have your horses properly prepared in frosty weather; also be sure that the seat of corn is kept well pared out in shoeing. If your saddle has shifted forward out of its place, dismount and regirth it where it fits, so that when you remount your weight will be properly placed away from the shoulders.

When the road is the only place available to have your horses exercised, see that your grooms put on the knee-caps.

Splints are a well-known affection of the fore leg, presenting the appearance of a bony protrusion along the canon or shank, which, though unsightly, is not very important, unless when lameness ensues.

As it is not my intention to enter into professional technicalities in this work, I shall merely remark that, by letting the horse continue in moderate work, though lame, with the application of Stevens's ointment, according to the directions accompanying it, absorption of the bony matter will be obtained, or, at all events, it will become so far resolved that the surrounding structures being able to accommodate themselves to what remains of it, their action will not be interfered with, and lameness will consequently no longer appear. Veterinarians sometimes perform a simple operation for splints which

is said to be efficacious—namely, that of dividing the periosteum with a bistuary, the periosteum being that membrane which encases all bones like a skin. When this is cleverly done there is little or no disfiguration left. Setons also are sometimes run over the exostosis or bony excrescence, but I deal only with simple remedies. As splints cannot be prevented, being a common result of work in young horses, the next best thing to be done is to resolve them while in an incipient state.

Clap of the Back Sinew—i.e., inflammation of the sheath under which the flexor tendon passes (as the most able practitioners deny that the tendon itself can be stretched, though it is liable to rupture about its insertions)—is best treated, according to some, by cold refrigerant lotions, Goulard lotion, solution of acetate of lead, &c.

I prefer plain water-dressing (page 149) placed loosely round the affected part of the leg, and the use of a high-heeled shoe (page 80). When the attack is beyond the reach of such mild treatment, the veterinary surgeon will probably advise blistering and firing to act as a perpetual bandage.

Moderate work on even surfaces will be the best preventive of this disease, and having the pavement of your stables made nearly level, as described under the head of "Stabling" (page 10).

Wind-Galls are undue distensions of the bursæ or bags of synovia at the back and sides of the lower part of the canon or shin intended to lubricate the adjacent structure. Though unsightly, and no improvement to the action of the horse, they can be reduced by external absorbents (page 148), also by bandages with refrigerant

repellants, such as vinegar and water (*see* "Grooming," page 14).

Ring-Bone is an unhealthy enlargement round the pastern above the coronet, generally in front, and may be removed in the incipient stage by external absorbents (page 148), beyond which a professional man had better be consulted.

Wrench or *Wrick*, occasioned by accident or strain in work over a rough path by a slip, presents generally no external swelling or indication of suffering beyond lameness in movement; but on close examination, inflammation will be discovered by extra heat about the part affected. Remove the shoe, give plenty of rest, and apply water-dressing (page 149) round the affected part. A purge may be administered, as recommended in all cases where the animal is laid up for several days. To avoid wrench, care should be observed in starting, turning, and working a horse, especially on uneven ground or when heavily laden.

Mallenders and *Sallenders* denote a scurfy state of the skin inside the bend of the knees and hocks. Let the parts be cleansed with hot water and soft soap, and rub in equal parts of hog's lard and mercurial ointment mixed; if there be a positive crack or sore, use the chloride of zinc lotion (*see* page 147) till healed. Keep a good attentive groom, and see that he does his work, as such blemishes are occasioned by carelessness and want of cleanliness.

Spavin is like splint, a bony excrescence, but on the lower part of the leg, at the inside of the *hock* towards the front, occasioned by local derangement from overwork of the structure.

If it does not produce lameness it had better be left

alone ; but otherwise, the horse being placed in a loose-box, rest should be given, and treatment with absorbents (page 148), the use of Stevens's ointment, &c., persisted in. A mild purge or two during the process will be beneficial.

As in nearly all affections of the legs and feet, proper reasonable work and due care will avert the disease or disfigurement.

Curb is an enlargement of the tendon or its sheath at the lower part of the back of the hock, with a good deal of local inflammation attending it.

It is greatly occasioned by the fashion some riders have of habitually throwing their horses back on their hocks by severe use of the bit.

Use water-dressing to reduce inflammation, then absorbents, such as Stevens's ointment (page 148). Give rest, &c., as directed for Spavin.

String-Halt is a well-known and only too conspicuous defect or affection of the nerves of the hind limbs, or emanating from the spine.

As its local origin is obscure, so also is the method of dealing with it.

It is in no way dangerous, though unsightly, and seriously deteriorating to the value of the animal, although it is said not to interfere much with his working powers.

Capped Hock is a pursy swelling over the *os calcis* or heel-bone at the end of the hock, generally produced by kicking either in the stable or against some object in harness, or possibly in consequence of exertion in getting up and lying down on a scanty bed, especially where the paving stones are uneven.

Use hot fomentations, loose water-dressing, followed

by rubbing in iodine ointment, if necessary, for reduction, but this must be done with judgment and careful observance of the effect the iodine produces. Keep a good bed for your horse to lie on at night.

For prevention, see "Kicking in the Stable" (page 83) and "Kicking-Strap" (page 58).

Thorough-Pin and *Bog-Spavin* are, like wind-galls, an undue distension of the bursæ containing the synovia intended to keep the surrounding parts of the leg lubricated; such distension interfering with the circulation of the vein in front of the hock is denominated "Blood" (or Bog) Spavin; at the back and sides of the hock these distensions are called Thorough-Pin.

The treatment is with absorbents, especially Stevens's ointment, iodine ointment, blisters, and actual cautery, which remedies had better be tried in rotation, the three latter only by a practitioner; but unless the distensions produce lameness, it is perhaps preferable not to meddle with them at all.

There are other diseases of the feet and legs, but requiring very delicate definitions: they must be left altogether to the professional man.

FARCY.

This dreaded disease is, I believe, like glanders, incurable, and generally ends in glanders itself.

Some practitioners seem to be under the impression that it only attacks worn-out and ill-conditioned animals; but from personal losses and sad experience I

may venture to differ entirely from such an opinion, and to state that I have seen horses in the finest condition lost by it. No doubt feeble animals are very liable to it, but the disease is not confined to such constitutions. I have remarked that, when contracted by high-conditioned horses, it can be traced to their being called on occasionally to do extra work, followed by entire rest for days together, as a sort of equivalent for the spurt of work done, during which period of rest (considered necessary on account of the beast's supposed state of exhaustion) his powers are taxed with the same amount of high feeding as if he were in full work.

Thus the absorbent system seems to become diseased, and farcy buds appear, accompanied by craving thirst, in which case, or on the least suspicion of the disease, reference should at once be made to a professional man.

From these buds (whence after a time matter is seen to exude) small cords may be traced leading to other swellings, rather serving to distinguish the early stages of farcy from surfeit, besides that in surfeit the lumps appear indolent and scabby.

To guard against this scourge of the stable, as the disease is contagious, be careful what company your horses keep, and let reason be used in the working, feeding, exercising, and general care of your stud.

What is called *Water Farcy* is neither dangerous nor contagious, and arises from debility of the system, occasioned probably by over-work and indifferent feeding.

It is generally marked by a dropsical swelling of the legs, mostly the hind ones. It is not common in

gentlemen's stables, where horses are less worked and better cared for than their neighbours.

The best cure is friction to the swelling, moderate work, and improved feeding.

RINGWORM.

Ringworm is characterised by one or more scurfy or scaly circular patches on the skin where the hair has fallen off. As soon as discovered, let the parts be washed with soap and tepid water twice a-day; and when they have been gently but perfectly dried, apply rather thickly the following ointment over the spots :—

Animal glycerine, .	1 ounce.
Spermaceti, . .	1 ,,
Iodide of lead, . .	2 drachms.

Rub the glycerine and spermaceti together, and when thoroughly incorporated, add the iodide of lead; give also every night the following drink :—

Liquor arsenicalis, . .	1 ounce.
Tincture of muriate of iron,	1½ ,,
Water, ...	1 quart.

Mix.—Dose, half a pint.

Continue this drink until the disease has disappeared.

Should ulceration remain about the circumferent edges after the central bare spot has been apparently cured, apply to the affected circuit six times a-day persistently, the following lotion :—

Chloride of zinc, .	2 scruples.
Water, . . .	1 pint.

The animal should be thrown up from work during

this treatment, which may be requisite for a month, and good food given.

Administer also a powerful alterative or two during the course of treatment, more particularly if the case is obstinate.*

SURFEIT

is an eruption on the skin, and generally gives way, if attended to immediately on its appearance, by relaxing the bowels mildly, giving partly green food instead of hay and bran mashes; at the same time keep up the strength by feeding with the best oats and a little beans, alternately with the laxative treatment.

Should these means not suffice, or the disease become worse, consult a medical practitioner, who will probably administer diuretics; or if you cannot procure a professional man, give the following excellent tonic and alterative drink, recommended by Mr Mayhew :—

Liquor arsenicalis, . .	1 ounce.
Tincture of muriate of iron,	1½ ,,
Water, ...	1 quart.

Mix, and give daily half a pint for a dose.

Hidebound requires the same treatment as surfeit.

Mange is generally the result of insufficient food and other privations endured at grass, and of the neglect of the skin consequent on animals being turned out for a time to take care of themselves.

It is highly contagious, and is now admitted to be occasioned by an insect which is engendered in the foul coat.

* This treatment is recommended by Mr Mayhew.

A capital wash is recommended by Mr Mayhew, viz. :—

Animal glycerine, . .	four parts.
Creosote, . . .	half a part.
Oil of turpentine, . .	one part.
Oil of juniper, . .	half a part.

About a pint and a half is said to be the quantity required to make one dressing. Every portion of the entire coat should be saturated with this wash, and thus left for two clear days, when it should be washed clean with soft soap and warm water, equal care being taken to omit no part of the body, which should afterwards be thoroughly dried and the coat well dressed or whisked.

When all is dry and clean apply a second dressing, proceeding as directed for the first, and a third after the two days have elapsed and the second cleaning process has been thoroughly gone through, after which the disease ought to be eradicated. A mere disposition to scratching is generally successfully treated by giving bran mashes night and morning for some days, and part green food instead of hay.

SORE BACK, WITHERS, AND SITFASTS,

should be carefully attended to with poultices or water-dressing (*see* page 149), while a disposition to throw off pus is present, after which the application of healing agents (among which chloride of zinc lotion and glycerine are now prominent) is the proper course, but applicable only to decidedly trifling and superficial cases. It is imperative, if a cure be desired, that no

pressure whatever from the saddle or any other cause of irritation be permitted; therefore, unless a saddler can effectually chamber and pack the saddle so as to prevent the possibility of its touching on or near the sore, the saddle must not be used at all.

The worst and common result of sores on the back is, that sinuses or cavities, with an almost imperceptible orifice, insidiously eat away like poll-evil into the more important part of the adjacent structure. Here the aid of the veterinary surgeon is indispensable.

(Being myself acquainted with anatomy, I used to get a depending orifice as near as possible to the bottom of the sinus (as discovered with a probe) by a bistuary, laying the sinus open all the way; or if the direction were rather superficial, by the insertion of a seton-needle about the width of the sinus, run out at bottom, leaving the seton in to direct the discharge. The latter operation, if carefully conducted, is decidedly the simplest and best when practicable.)

For prevention of sore back avoid injurious pressure from an ill-fitting saddle; also removing it too quickly from the back of a heated animal (*see* "Work," page 37). Pressure of the terret-pad (*see* page 58), or of the roller from not being properly chambered over the ridge of the back (*see* page 19), must also be carefully guarded against.

WOUNDS,

if deep or dangerous, should meet with the immediate attention of a surgeon, as none but anatomists should deal with them. Generally speaking, the loss of a moderate quantity of blood is rather beneficial than otherwise, tending to avert inflammation. Where water-dressing (*see* page 149) can be applied, nothing

is better in the first instance; and when the wound is fairly cleansed and evidently healing, the chloride of zinc lotion (*see* page 147) will advance that process and help to dry it up. When the surface is *perfectly* healed and a new skin formed, the growth of the hair will be promoted by the application of hog's lard coloured with very finely powdered burnt leather.

MEGRIMS OR EPILEPSY

may proceed from the effects of the sun in very hot weather, from congestion of the blood-vessels of the brain and head, or from disordered stomach or indigestion. The horse when at work suddenly evinces a disinclination to proceed, appears bothered, and shows unaccountable perverseness—sometimes staggers and falls. Release him at once from whatever work he may be at; if the cause can be descried, treat in the most reasonable way accordingly. If the illness is supposed to proceed from the heat of the sun or congestion of the head, dash water on the head and keep it enveloped in cold wet cloths; also cool the system by aperients, giving rest for some time. If from indigestion, repeated mild aperients should be administered.

It is a strange fact known to those who are experienced on the road, that these fits are seldom or never taken during work at night.

CRIB-BITING.

Some able veterinarians declare this disease to be the result of an endeavour to eject acidity from the

stomach, as the horse cannot vomit, while others compare it to the human belch. It is almost impossible to *cure* a crib-biter; the only thing that can be done is, to palliate and prevent it, which is essential, as the habit is not only injurious to the horse himself, but one that, strange to say, is most readily imitated by his companions; in whatever stable such an animal may be, the others are liable to become crib-biters.

By leaving a lump of rock-salt in horses' mangers many ailments may be averted. Licking it is a resource to them in their hours of solitary confinement. In the present instance a lump of chalk might be added, for the animal to amuse himself at any moment that he is left without a muzzle (which should be made for him by an experienced saddler, and constantly used). The chalk being essentially antacid, is decidedly useful if the habit is supposed to result from acidity.

As the muzzle should not be left off for any length of time, the food should be prepared to be taken up in the most rapid form—viz., a small quantity of chaff to bruised oats. When the beast finds by experience that his feeding time is limited, with starvation for the alternative, he will probably prefer his food to gnawing the iron during the short space allowed him without his muzzle. A simple remedy sometimes used with good effect is, keeping a tightened strap round the creature's neck when he is not feeding; and I have known the covering of every portion of the stall within his reach with rabbit or sheep skins, the hair outside, to effectually check a crib-biter for the time being, the habit being resumed, however, on his removal to another stall.

METASTASIS.

As this term is frequently used by practitioners, it may be well to explain that it is a Greek word signifying a removal from one place to another, employed as a technical designation in describing a change of the seat of disease from one part of the animal structure to another, which is by no means uncommon: for instance, when the feet are attacked with fever, that malady will appear to remove itself to some other and probably distant part, and fix itself on the lungs or other viscera, the same way that inflammation of the lungs and other parts of the upper structure will change amongst themselves, or from their own seat of disease to the feet.* I have even known superpurgation (occasioned, in a pair of horses, by *undue*, but not severe work when under the irritation of the medicine) to

* For example, an animal is in nearly a hopeless state from inflammation of the lungs and pleura, perhaps as a complication of distemper. Suddenly there is an amelioration in the symptoms; the hurried breathing resumes the characteristics of ordinary respiration—the owner, or veterinary surgeon in attendance, pronounces the patient to be out of danger—the improvement is regarded as almost miraculous. But in about twenty-four hours, often less, the horse is observed to move with difficulty in the stable; if he lies down, he is disinclined to get up; when standing, the fore feet are kept considerably more in advance than usual, the hind ones far forward under the body, so that they may as much as possible relieve the fore feet and legs from the superincumbent weight. In aggravated cases, as the heels of the fore feet are the parts which bear the most weight in progression, the horse, when forced to walk, which he can only accomplish with great difficulty, elevates the toe at every step, bringing the heel, instead of it, to the ground. The horse is then suffering from acute laminitis, or what is more generally in horse-parlance termed "founder."

cause fever of the feet, by a metastasis, changing the seat of irritation from the internals to the extremities—a very palpable case in point.

SETONS.

The insertion of a seton properly belongs to the professional man, and only for the guidance of persons who, from living in remote neighbourhoods or other causes, cannot possibly procure the assistance of such, the following information is inserted, in order to obviate the necessity for some ignorant farrier being permitted to perform the operation after his own fashion. The skin is first divided by surgical scissors made for such purposes, to the width of the seton-needle to be used, which must be wide or narrow, according to the orifice required, with white linen tape passed through its eye, about the same width as the needle and orifice. The needle is then inserted at the opening, and, passing superficially under the skin, is directed towards the point where the lower or depending orifice is intended to be, and where the needle and tape are drawn out. Sufficient tape must be left at each extremity to admit not only of its being tied round small rolls of tow which keep the tape from running through at either side, but some inches of the tape should be left in addition at one end, to allow of a portion being drawn out at one orifice each day, and a fresh piece with dressing being drawn in at the other.

In cases where there is already an upper orifice with sinuses, the surgeon (if he does not lay the place entirely open with a knife, which, if the sinuses are deep-seated,

he will do) will insert the seton-needle at such orifice, no incision with the scissors being necessary, the direction of the sinuses having been first ascertained by the careful use of the probe. The dressing to be applied to the tape will be either chloride of zinc lotion, Venice turpentine, or tincture of arnica lotion (*see* "Lotions"), according as the healing or discharging process may be desired, the first being the healing application. Farriers attempting this operation will even now adopt an old and most objectionable practice of tying the two ends of the seton-tape together, and turning it round at each fresh dressing; the consequence being that, if anything happen to catch in the loop thus made, the whole piece of skin may be dragged out.

LOTIONS, PURGES, BLISTERS, &c.

Strong Healing Lotion. — Chloride of zinc, two scruples; water, one pint.

Weaker, as for sore mouth, &c.—Chloride of zinc, one scruple; water, one pint.

To encourage Pus, and heal subsequently.—Tincture of arnica, one ounce; water, one pint.

To keep off Flies from wounds or bruises.—Apply a rag dipped in solution of tar.

Glycerine Lotion.—Glycerine, half pint; chloride of zinc, half ounce; water, six quarts.

To abate External Inflammation.—Vinegar, two ounces; Goulard lotion, one ounce; water, two pints.

Liniment for the Neck in Cold and Distemper, Sore Throat, &c.—One part spirit of turpentine, two parts oil, mixed, or equal parts of each, and rubbed in once or twice daily.

Purges.—A mild purge is composed of—aloes, four drachms; extract of gentian, two drachms.

A very mild Laxative Drench.—Castor-oil, three ounces; linseed-oil, two ounces; warm gruel, one pint—Mix.

Of linseed-oil alone the ordinary dose is one pint.

If ineffectual, to be repeated, with the addition of twenty drops of croton-oil.

Alterative Ball (for surfeit and skin diseases).—Cream of tartar, half drachm; nitre, two drachms; flowers of sulphur, half ounce—Mix in mass.

External Absorbents.—Iodine ointment and tincture, Stevens's ointment,* water-dressing.

Restoratives or Renovators—Drenches.—A quart of stout, morning or evening; hay-tea, when mashes are refused; gruel properly prepared (page 150) and linseed mashes (page 22).

Soothing Drench in Colic.—Sulphuric ether, one ounce; laudanum, one ounce; linseed-oil, one pint.

Astringent Drenches (for diabetes).—Diluted phosphoric acid, one ounce; chilled water, one pint.

Or—Oak-bark, one ounce; alum, quarter ounce; camomile tea, one pint—Made into a drench.

Feeding on old hay is generally effectual to check purging.

Clysters† (for diarrhœa, dysentery, or over-purgation).—Laudanum, one ounce—Mixed in three pints warm thin starch, repeated every half-hour as long as necessary. (The above is soothing and *astringent.*)

(For inflammation of the bladder or kidneys).—Injections of warm linseed tea constantly repeated.

(For dysentery).—Injections of cold linseed tea.

(For colic).—Injection of one pint of turpentine

* Prepared and sold by Mr H. R. Stevens, V.S., 8A Park Lane, London, W., and all chemists.

† The use of the clyster syringe by unskilled hands is *very dangerous*—serious injury to the rectum being the common result; therefore great caution should be used to insert the pipe (well greased) slowly and not too high up the channel.

mixed in two quarts of hot soap-suds. (Soothing and *laxative.*)

Ointment (to recover hair).—Equal parts hogs' lard and mercurial ointment, with *very finely powdered* burnt leather to colour it.

Poultices are made of bran or linseed-meal, with boiling water, and applied as hot as bearable. They are seldom used except for the feet, in which cases the leather shoe is useful.

Water-dressing (for sores, &c.)—Pads of linen kept *continually fully* saturated with water, and entirely over them is kept fixed a waterproof covering of oiled silk or calico (gutta-percha is too liable to tear) to prevent evaporation. The pads should be changed every three or four hours, and cleansed where they are intended to promote effusion of matter.

For Acidity.—A lump of chalk kept in the manger.

For General Health.—A lump of rock-salt always in the manger.

For Worms.—Two grains of arsenic and twenty grains of kamela twice daily (each dose mixed in a handful of wet bran, and given with oats or other feeding) for eighteen days, and a purge the nineteenth morning. The horse may get *moderate* work during the administration of the powders. Or, common salt, a tablespoonful daily, to be mixed with the food.

Strong Mustard Blister.—For cases of acute inflammation, mustard to be made into a paste, eight ounces; oil of turpentine, two ounces—To be well rubbed into the chest or belly in severe inflammation.

Blisters should never be applied to a horse's four legs at the same time, as is the practice with some farriers. Two legs only should be blistered at once, and an in-

terval of three or four days suffered to elapse before the application of the remaining blisters. The animal's head should be tied up for at least thirty hours after the blister is put on, to prevent his gnawing the part; but if a cradle round the neck can effect the same purpose in cases where other parts are blistered, its use is preferable to tying up the head.

Sedative.—To allay excitement after a wound, &c.: tincture of aconite, ten to twenty drops, in drench of one pint of water with chill off.

To make Gruel.—Mix well a pound of oatmeal in a quart of cold water; put this mixture in a stew-pan containing three quarts of boiling water, stir all well over the fire till it becomes thick, then leave it aside to cool sufficiently to be eatable.

Disinfectant.—As it will perhaps be useful to any proprietor of horse-flesh, who may unfortunately have had contagious disease in his stables, such as farcy or glanders, to know how premises should be disinfected according to the most approved means, the following recommendations of Government for purifying the holds of ships, during the prevalence of rinderpest, are appended :—

Suggestions for Disinfecting Holds of Ships.—The Government has issued the following circular to the shipowners and veterinary inspectors of Irish ports. It must not be forgotten that the importation of raw hides is still permitted.

"*23d August* 1865.

"The usual means had recourse to for the purpose of disinfecting the holds of vessels (such as washing and subsequently applying diluted disinfecting solutions, the most generally used of which is chloride of lime), do not possess sufficient

efficacy, particularly within the limited time that can be devoted to that purpose, without interfering with the commercial interests of the vessels.

"It would occupy too much time to carefully scour and afterwards apply a disinfecting fluid to the entire surface of a ship's hold, in which, generally, there are many crevices and parts that cannot be reached by the hand or brush. Such crevices and parts are capable of retaining the contagious and infectious principles in all their virulence.

"Holds of vessels, and all other chambers from which the external air can be excluded for a time, can be, comparatively speaking, most effectually disinfected by filling them with chlorine gas, the great disinfecting principle of chloride of lime. The gas insinuates itself into every chink, crevice, and part of the chamber in which it is confined, and more effectually decomposes the contagious and infectious compounds, whether they be solid, fluid, or aeriform, than any other disinfectant equally easy of application, and as cheap. The mode of disinfecting the hold of a vessel with chlorine is, to place a quantity of common salt and black oxide of manganese in a strong basin, which may be put into a bucket, to the handle of which a rope has been attached. Pour on the salt and black oxide of manganese their combined weight of sulphuric acid; then let the bucket containing the basin a little way down into the hold by the rope attached to its handle. The chlorine gas, being heavier than the atmospheric air, will quickly displace the latter and fill the hold. In a short time, when the hold has become filled with chlorine, the hatches may be battened down for about half an hour.

"Previous to using the hold again for live freight, a current of air should be admitted through it to remove the chlorine.

"Many recommend the use of charcoal; but it is not alone more difficult of application, but it is much less of a disinfectant than a deodoriser. Charcoal will not, like the chlorides, decompose the matter of disease. If the damp matter of glanders, or sheep-pox, be well mixed with a strong solution of chloride of lime, it will seldom produce bad effects by inoculation; but if pure charcoal of any kind be used, the contagious principle of the diseased matter is not at all diminished

in its virulence—quite the contrary; similar results are found if cow-pox be the matter used in the experiment.

"The cost of the readiest materials for the production of chlorine gas is very trifling. The salt is not ¼d. per pound; black oxide of manganese but 4d. per pound; and sulphuric acid 1½d. per pound. These are the retail prices. A couple of pounds weight of each would suffice for a large-sized hold.

"The attention of the customs, shipowners, and veterinary inspectors is directed to the above disinfecting means.

(Signed) "HUGH FERGUSON,
Her Majesty's Veterinary Surgeon,
Principal Government Veterinary Inspector, Ireland."

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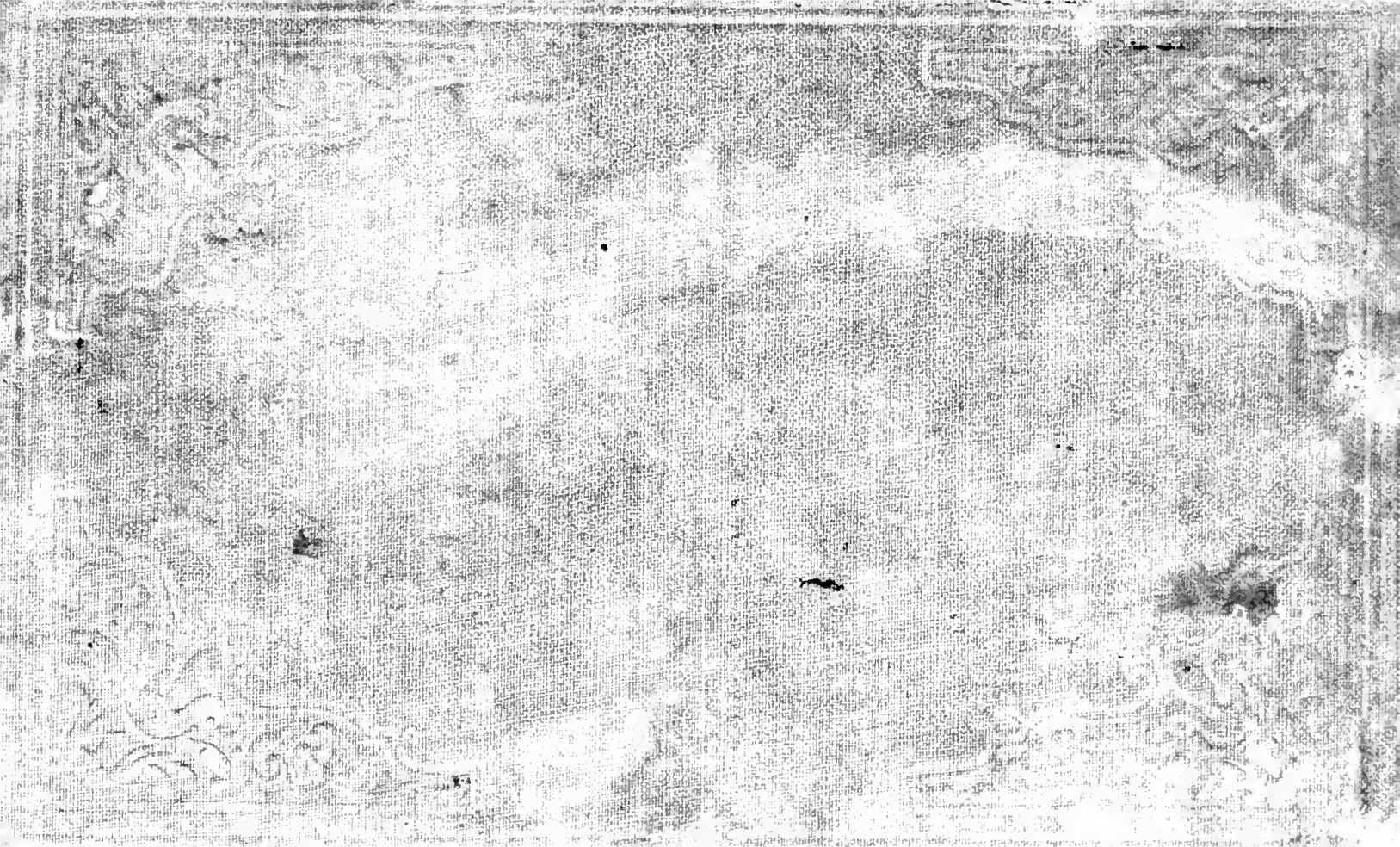
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